HCD-VX88

SERVICE MANUAL

E Model

Ver 1.3 2002.11

HCD-VX88 is the tuner, tape player, VIDEO CD/ CD player and amplifier section in MHC-VX88.

This stereo system is equipped with the Dolby B-type noise reduction system*.
* Manufactured under license from Dolby Laboratories Licensing Corporation.
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CD Section	Model Name Using Similar Mechanism	HCD-VX77
	CD Mechanism Type	CDM58-K2BD37A
	Base Unit Name	BU-K2BD37A
	Optical Pick-up Name	KSM-213DAP/Z-NP
TAPE Section	Model Name Using Similar Mechanism	HCD-VX77
	Tape Transport Mechanism Type	TCM-230AWR11

SPECIFICATIONS

Amplifier section

The following measured at AC 120, 220, 240V 50/60 Hz
DIN power output (rated) 160 + 160 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference) 200 + 200 watts (6 ohms at 1 kHz, 10% THD)

Inputs
MD/VIDEO (AUDIO) IN: (phono jacks) voltage 450 mV/250 mV, impedance 47 kilohms
MIC: (phone jack) sensitivity 1 mV, impedance 10 kilohms

Outputs
VIDEO OUT: (Phono jack) max. output level 1 Vp-p, unbalanced, Sync negative, load impedance 75 ohms
S-VIDEO OUT: (4 pin/mini-DIN jack) Y: 1 Vp-p, unbalanced Sync negative
C: 0.286 Vp-p
load impedence 75 ohms
PHONES: (stereo mini jack) accepts headphones of 8 ohms or more
FRONT SPEAKER: accepts impedance of 6 to 16 ohms
SATELLITE SPEAKER: accepts impedance of 6 to 16 ohms

VIDEO CD/CD player section

System: Compact disc and digital audio system
Laser: Semiconductor laser (λ=780nm)
Emission duration: continuous
Laser output: Max. 44.6 μW*
*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Frequency response: 2 Hz – 20 kHz (±0.5 dB)
Wavelength: 780 – 790 nm
Signal-to-noise ratio: More than 90 dB
Dynamic range: More than 90 dB
Video color system format: NTSC, PAL
CD OPTICAL DIGITAL OUT (Square optical connector jack, rear panel)
Wavelength: 660 nm
Output Level: –18 dBm

Tape player section

Recording system: 4-track 2-channel stereo
Frequency response (DOLBY NR OFF): 40 – 13,000 Hz (±3 dB), using Sony TYPE I cassette
40 – 14,000 Hz (±3 dB), using Sony TYPE II cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range: 87.5 – 108.0 MHz
Antenna: FM lead antenna
Antenna terminals: 75 ohm unbalanced
Intermediate frequency: 10.7 MHz

AM tuner section

Tuning range
Middle Eastern models: 531 – 1,602 kHz (with the interval set at 9 kHz)
Other models: 531 – 1,602 kHz (with the interval set at 9 kHz)
530 – 1,710 kHz (with the interval set at 10 kHz)
Antenna: AM loop antenna
Antenna terminals: External antenna terminal
Intermediate frequency: 450 kHz

— Continued on next page —

COMPACT DISC DECK RECEIVER

9-929-218-14
2002K0500-1
© 2002.11
Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

General

Power requirements	
Thailand models:	220 V AC, 50/60 Hz
Other models:	120 V, 220 V or 230 - 240 V AC, 50/60 Hz Adjustable with voltage selector
Power consumption	250 watts
Dimensions (w/h/d)	Approx. 280 x 360 x 425 mm ($11 \times 14^{3}/_{16} \times 16^{11}/_{16}$ in.)
Mass:	Approx. 11 kg (24 lb. 5 oz)

Design and specifications are subject to change without notice.

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

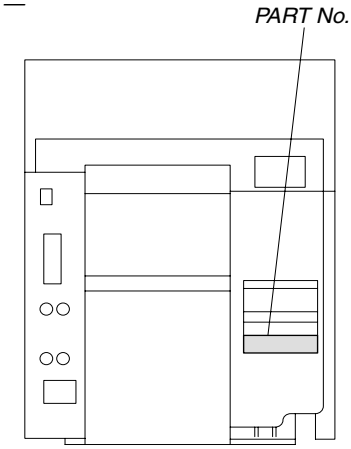
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

MODEL IDENTIFICATION

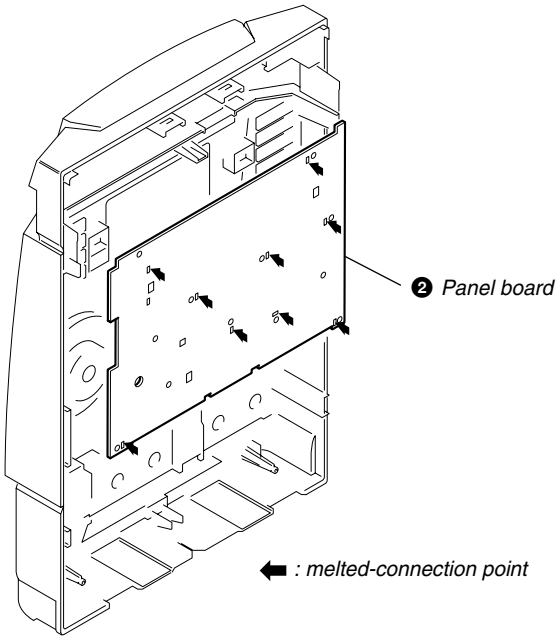
— BACK PANEL —



MODEL	PART No.
EXCEPT IA model	4-225-040-7☐
IA model	4-227-061-2☐

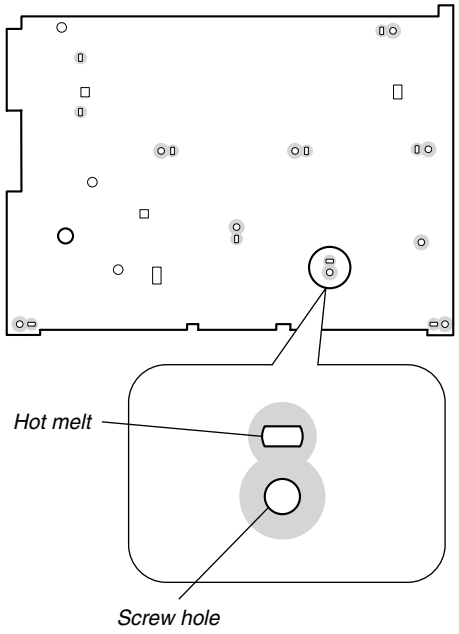
- Abbreviation
  IA : Indonesian

SECTION 1
SERVICE NOTES



❶ *Cut the nine melted-connection points with cutting pliers.*

Note for installing the panel board



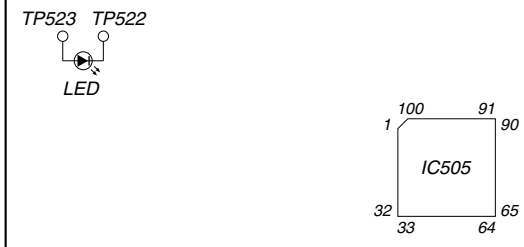
Attach the panel board with six screws (+BVTP 2.6 × 8) after the board is removed once. Do not tighten the screws excessively.

SELF-DIAGNOSIS

This model has the self-diagnosis function for the VIDEO and AUDIO decoder sections.
Connecting to the LED between TP522 and TP523 on the VIDEO BOARD.
Immediately after the power on, the self-diagnosis function searches each operation of IC's around the CD mechanism control microcomputer (IC502). and TP5
The results can be checked by LED of the VIDEO board.

Oscilloscope (Waveform)	Symptom
H L *Light*	No error
H L *2 time blinking*	MPEG decoder (IC505) error
H L *3 time blinking*	MPEG decoder (IC505) or DRAM (IC507) error

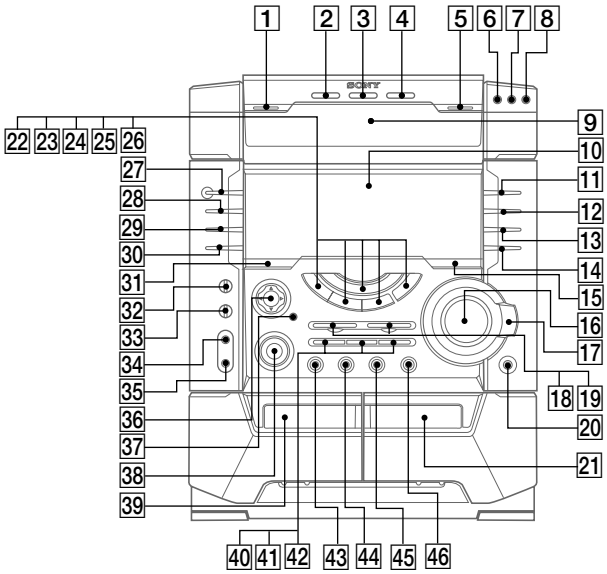
[VIDEO BOARD] (SIDE A)



SECTION 2
GENERAL

LOCATION OF CONTROLS

- **Front view**

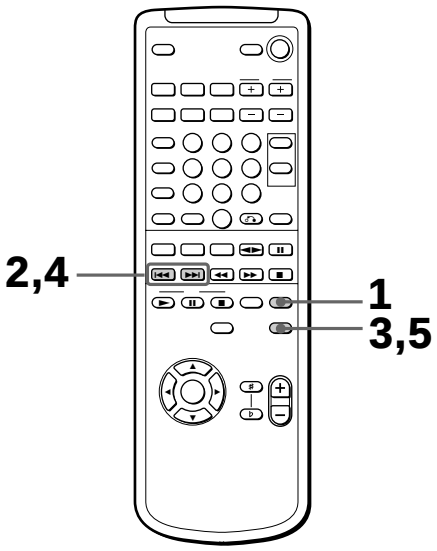


1 DISC SKIP button
2 DISC 1 button and indicator
3 DISC 2 button and indicator
4 DISC 3 button and indicator
5 ⏏ OPEN/CLOSE button
6 PREV button
7 NEXT button
8 RETURN button
9 CD disc tray
10 Fluorescent indicator tube
11 EDIT, TUNER MEMORY button
12 PLAY MODE, STEREO/MONO button
13 REPEAT, DOLBY NR button
14 DIRECTION button
15 CINEMA SPACE button
16 VOLUME knob
17 Shuttle knob
18 ■ button
19 ⧏⧐ button
20 PHONES jack
21 Tape deck-B
22 TAPE A/B button
23 CD button
24 Function indicator
25 TUNER/BAND button
26 MD (VIDEO) button
27 I/⏻ button and indicator
28 DISPLAY button
29 SPECTRUM button
30 EQ EDIT button
31 GROOVE button
32 ECHO LEVEL knob
33 MIC LEVEL knob
34 MIC2 jack
35 MIC1 jack
36 ◁, ▷, △, ▽ button and indicator
37 PICTURE EFFECT button
38 V-GROOVE button and indicator
39 Tape deck-A
40 – ⏮ button
41 ⏸ button
42 ⏭ + button
43 KARAOKE PON button
44 CD SYNC HI-DUB button
45 REC PAUSE/START button and indicator
46 ENTER button

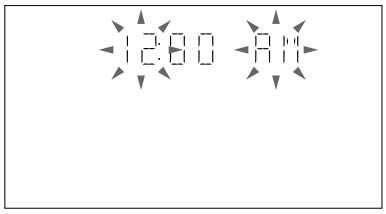
This section is extracted from instruction manual.

Step 3: Setting the time

You must set the time before using the timer functions.



1 Press CLOCK/TIMER SET.
The hour indication flashes.

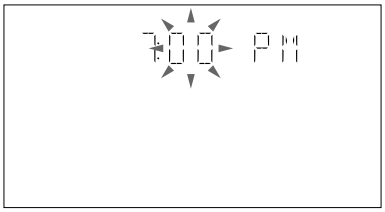


2 Press ⏮ or ⏭ repeatedly to set the hour.

continued

Step 3: Setting the time (continued)

3 Press ENTER.
The minute indication flashes.



4 Press ⏮ or ⏭ repeatedly to set the minute.

5 Press ENTER.
The clock starts working.

Tip

If you've made a mistake, start over from step 1.

To change the time

The previous explanation shows you how to set the time while the power is off. To change the time while the power is on, do the following:

1 Press CLOCK/TIMER SET.
2 Press ⏮ or ⏭ repeatedly to select SET CLOCK.
3 Press ENTER.
4 Perform steps 2 through 5 above.

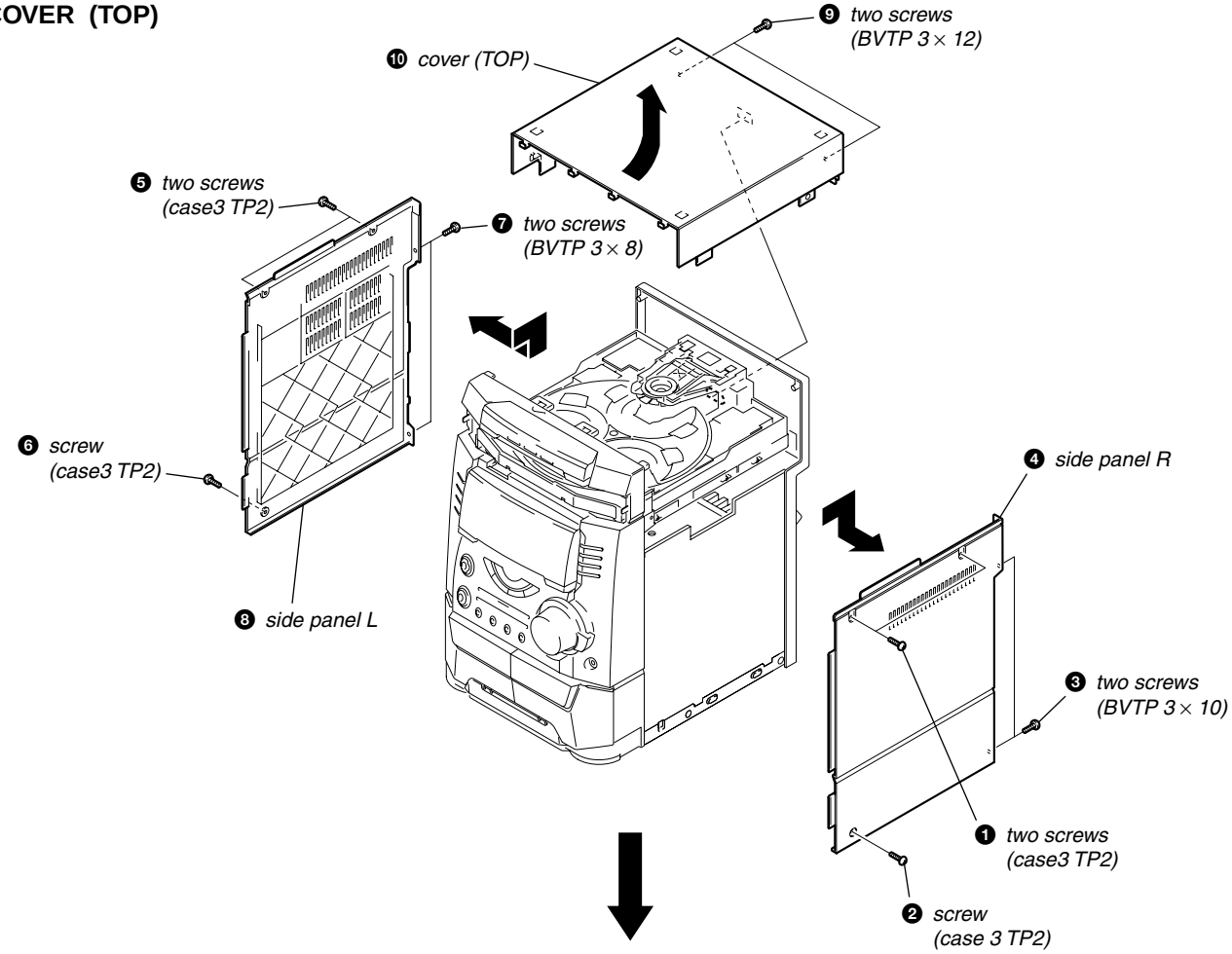
Note

The clock settings are canceled when you disconnect the power cord or if a power failure occurs.

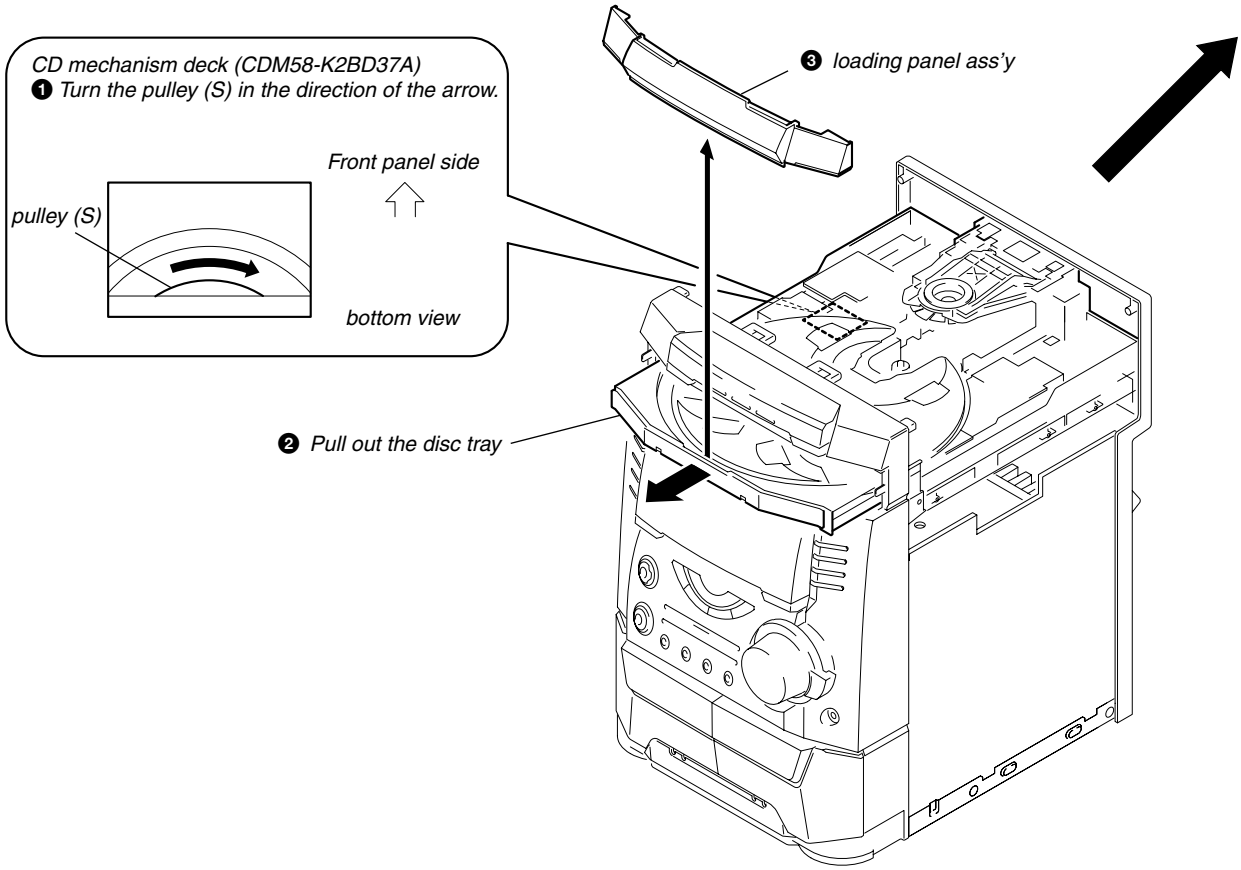
SECTION 3
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

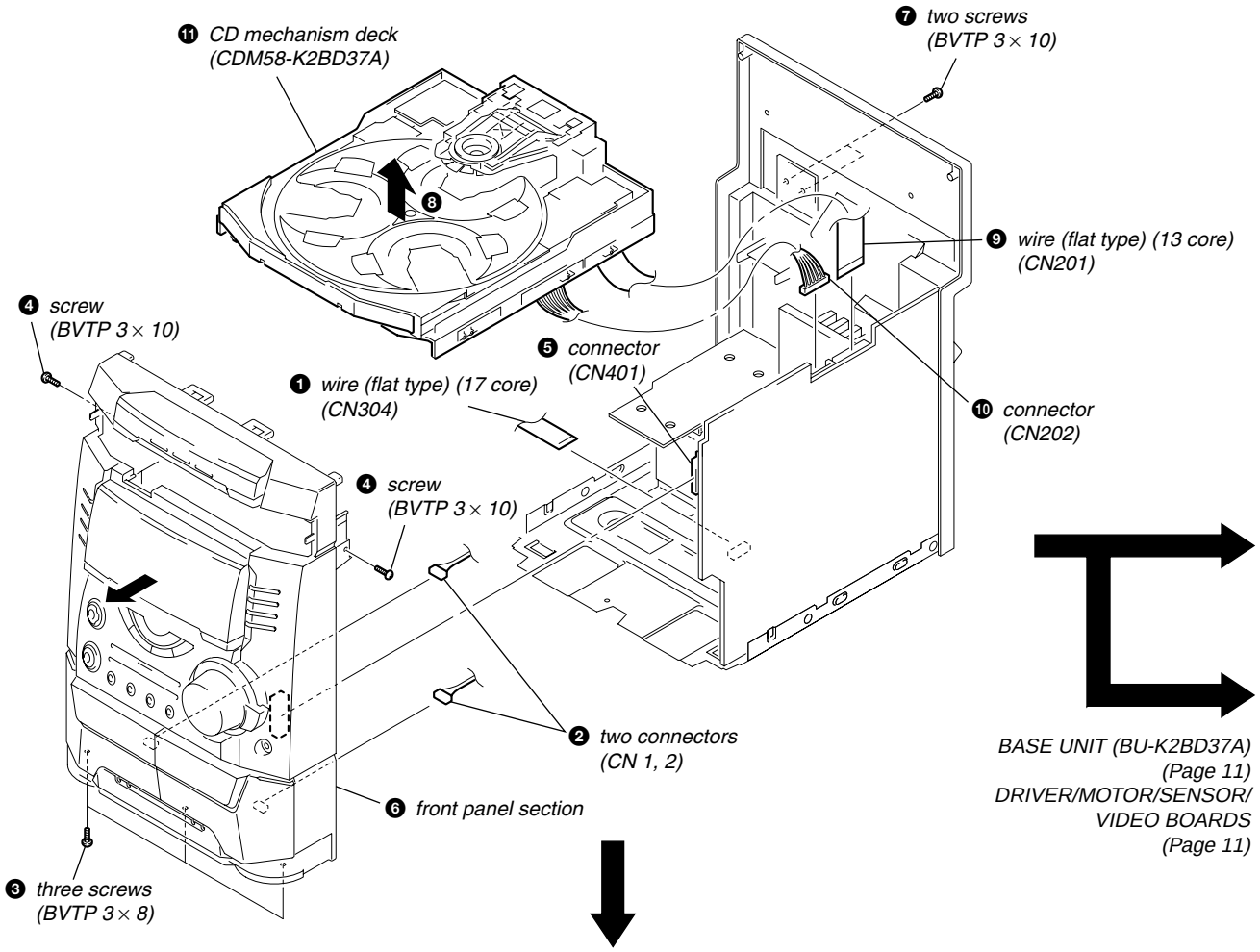
COVER (TOP)



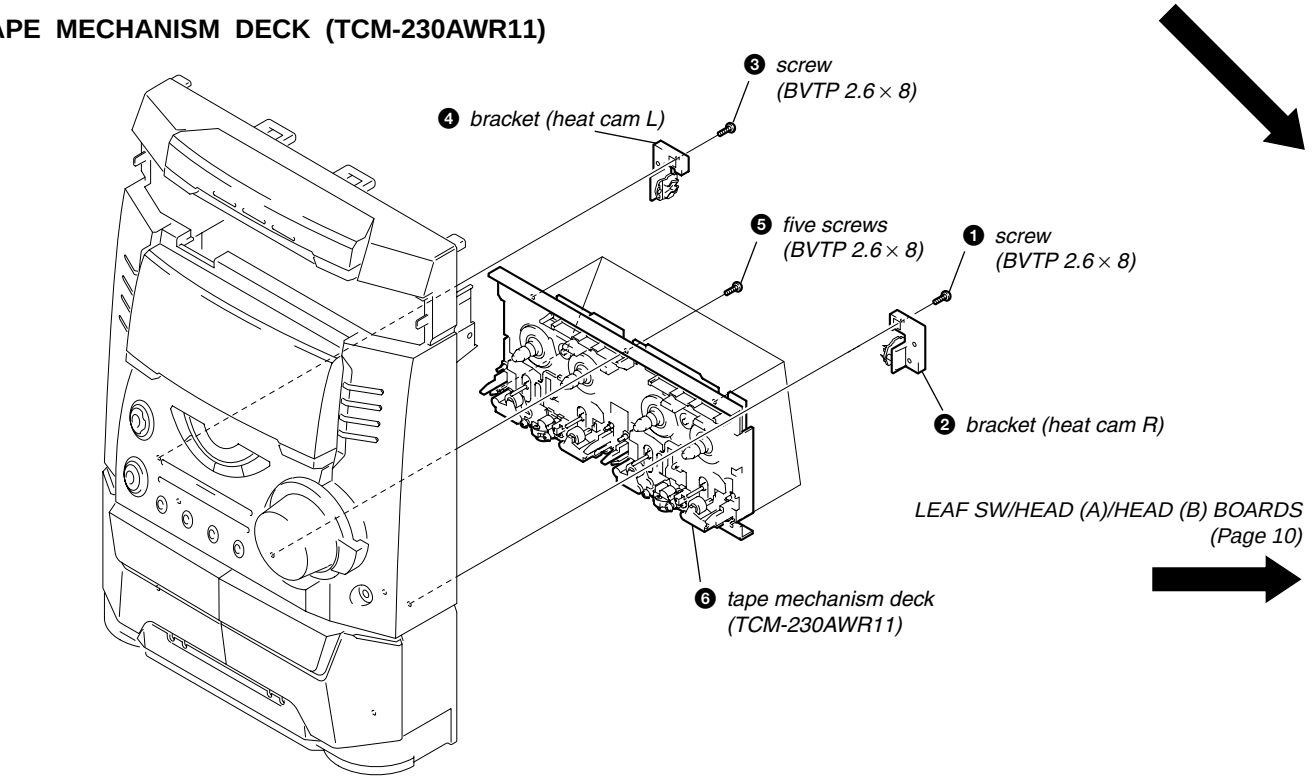
LOADING PANEL ASS'Y


CD mechanism deck (CDM58-K2BD37A)
❶ Turn the pulley (S) in the direction of the arrow.
Front panel side
pulley (S)
bottom view
❸ loading panel ass'y
❷ Pull out the disc tray

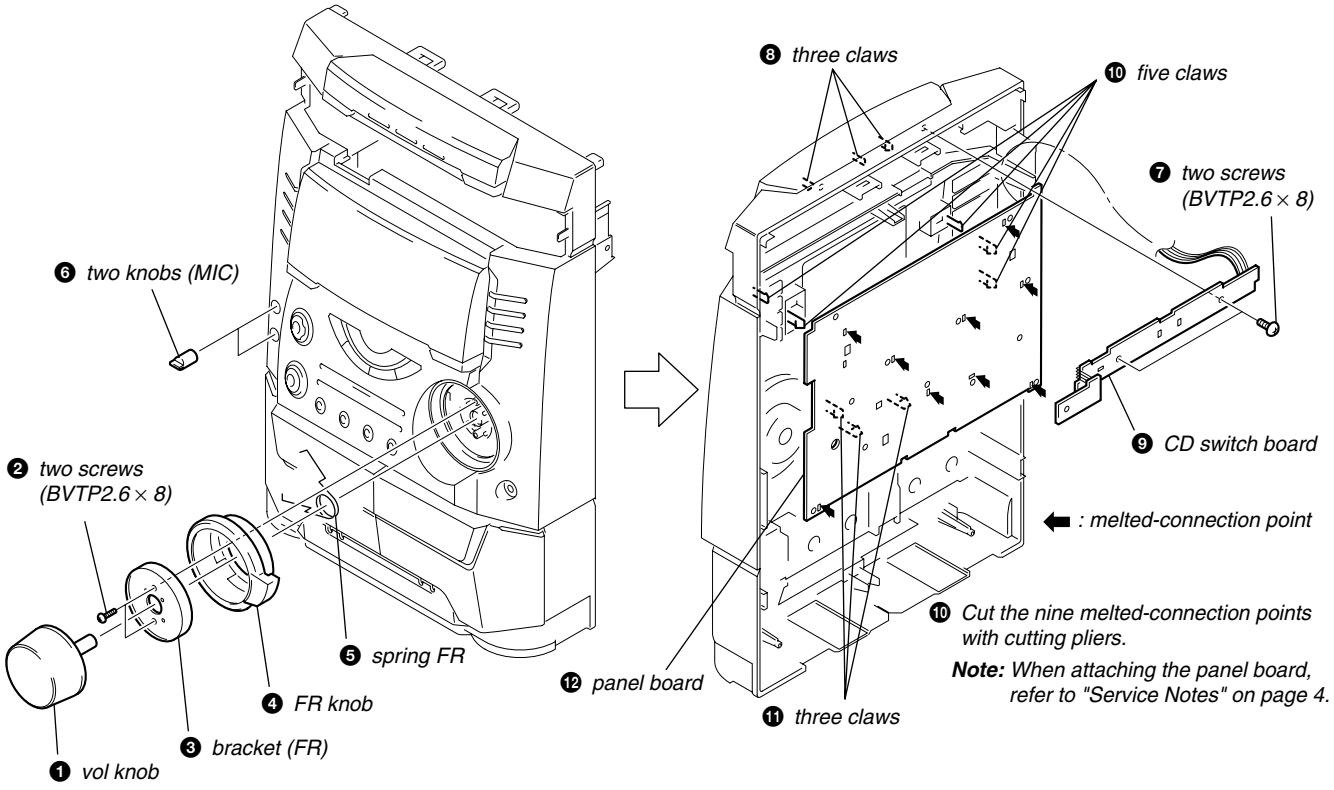
FRONT PANEL SECTION, CD MECHANISM DECK (CDM58-K2BD37A)


⓫ CD mechanism deck (CDM58-K2BD37A)
⓭ two screws (BVTP 3× 10)
❽
❾ wire (flat type) (13 core) (CN201)
❹ screw (BVTP 3× 10)
❺ connector (CN401)
❶ wire (flat type) (17 core) (CN304)
❿ connector (CN202)
❹ screw (BVTP 3× 10)
❷ two connectors (CN 1, 2)
❻ front panel section
❸ three screws (BVTP 3× 8)
BASE UNIT (BU-K2BD37A) (Page 11)
DRIVER/MOTOR/SENSOR/ VIDEO BOARDS (Page 11)

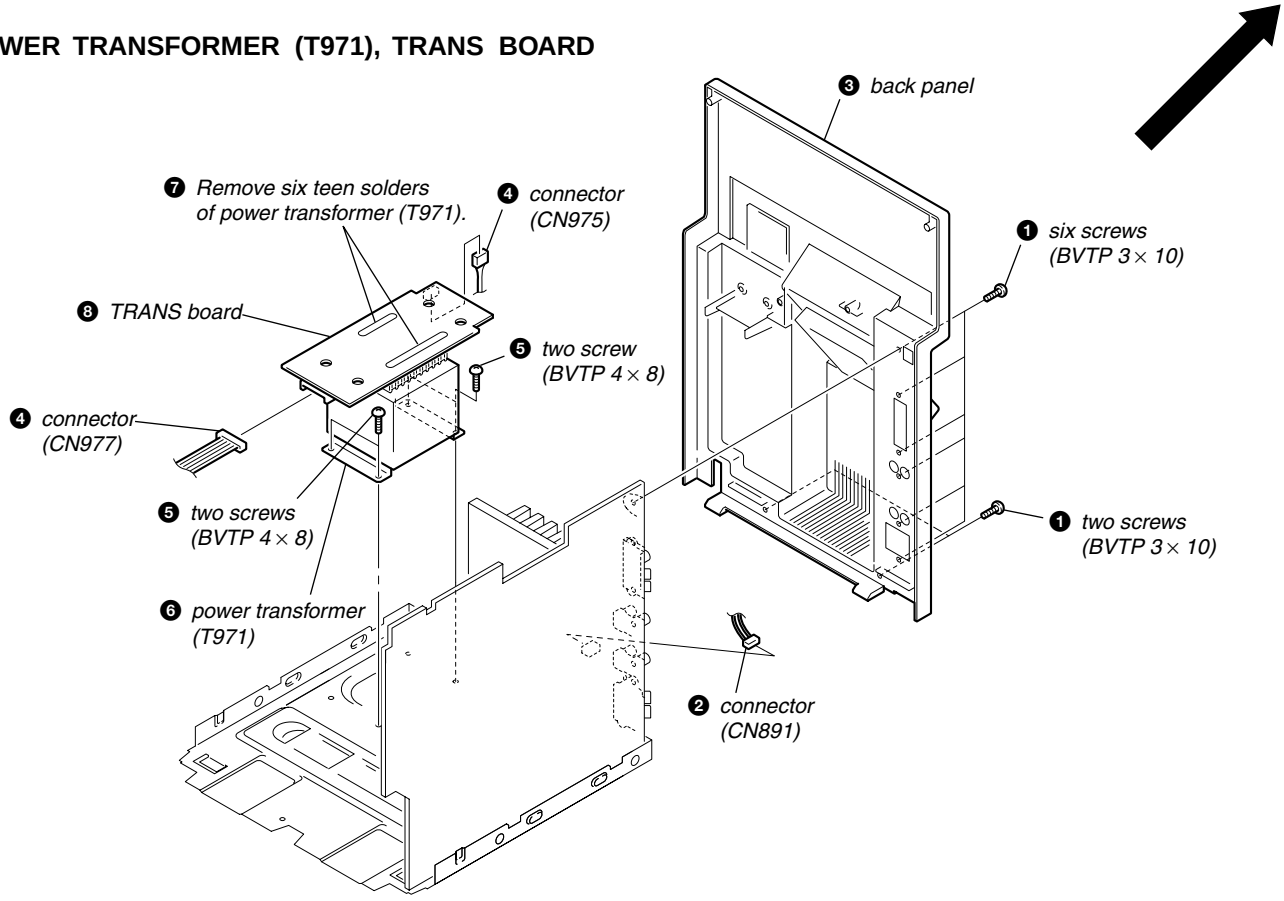
TAPE MECHANISM DECK (TCM-230AWR11)


❸ screw (BVTP 2.6× 8)
❹ bracket (heat cam L)
❺ five screws (BVTP 2.6× 8)
❶ screw (BVTP 2.6× 8)
❷ bracket (heat cam R)
LEAF SW/HEAD (A)/HEAD (B) BOARDS (Page 10)
❻ tape mechanism deck (TCM-230AWR11)

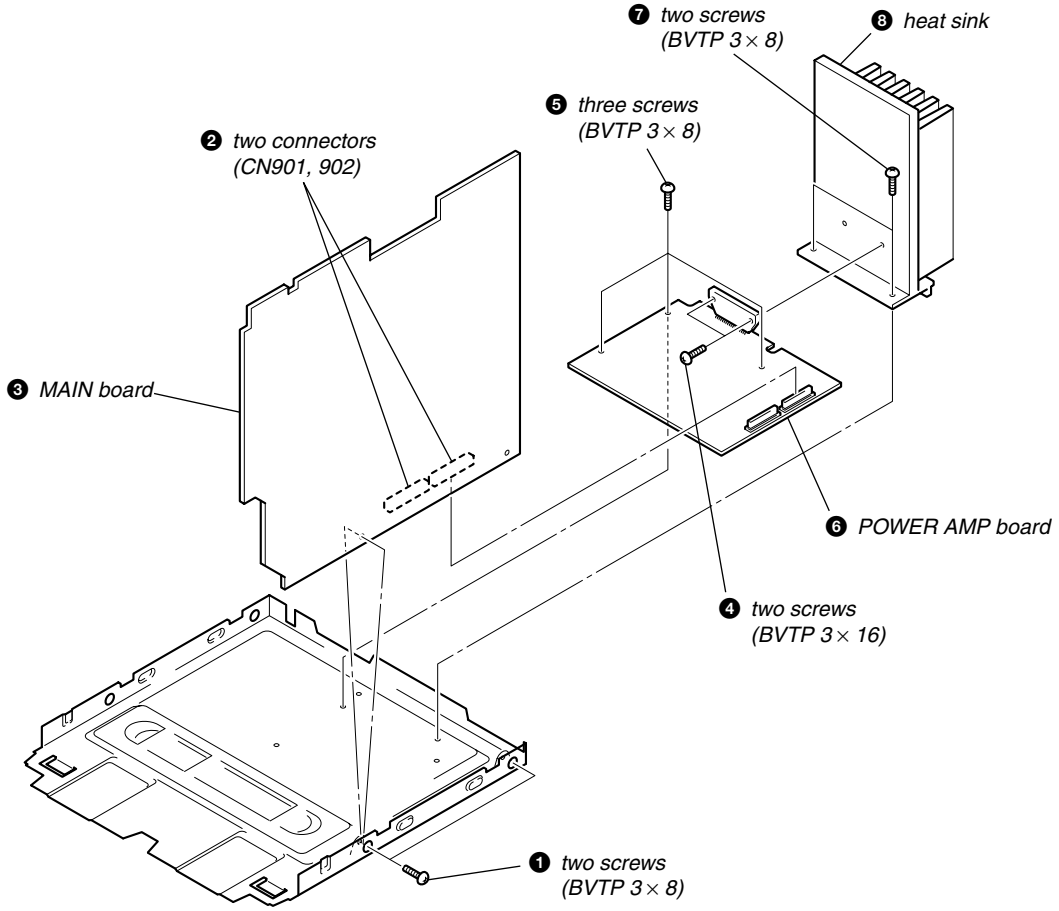
PANEL BOARD


❽ three claws
❿ five claws
❼ two screws (BVTP2.6 × 8)
❻ two knobs (MIC)
❾ CD switch board
❷ two screws (BVTP2.6 × 8)
: melted-connection point
❿ Cut the nine melted-connection points with cutting pliers.
Note: When attaching the panel board, refer to "Service Notes" on page 4.
❺ spring FR
❹ FR knob
❸ bracket (FR)
❶ vol knob
❿ panel board
⓫ three claws

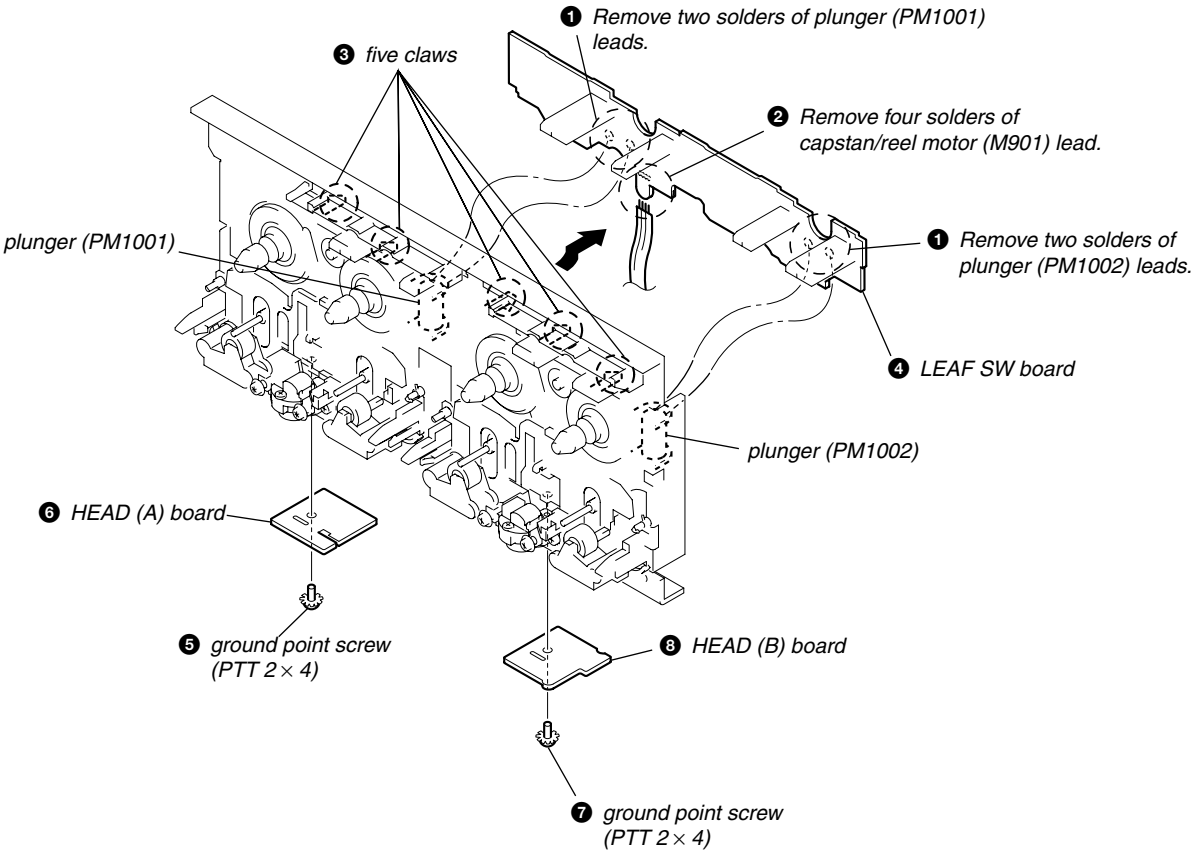
POWER TRANSFORMER (T971), TRANS BOARD


❸ back panel
❼ Remove six teen solders of power transformer (T971).
❹ connector (CN975)
❶ six screws (BVTP 3 × 10)
❽ TRANS board
❺ two screw (BVTP 4 × 8)
❹ connector (CN977)
❺ two screws (BVTP 4 × 8)
❶ two screws (BVTP 3 × 10)
❻ power transformer (T971)
❷ connector (CN891)

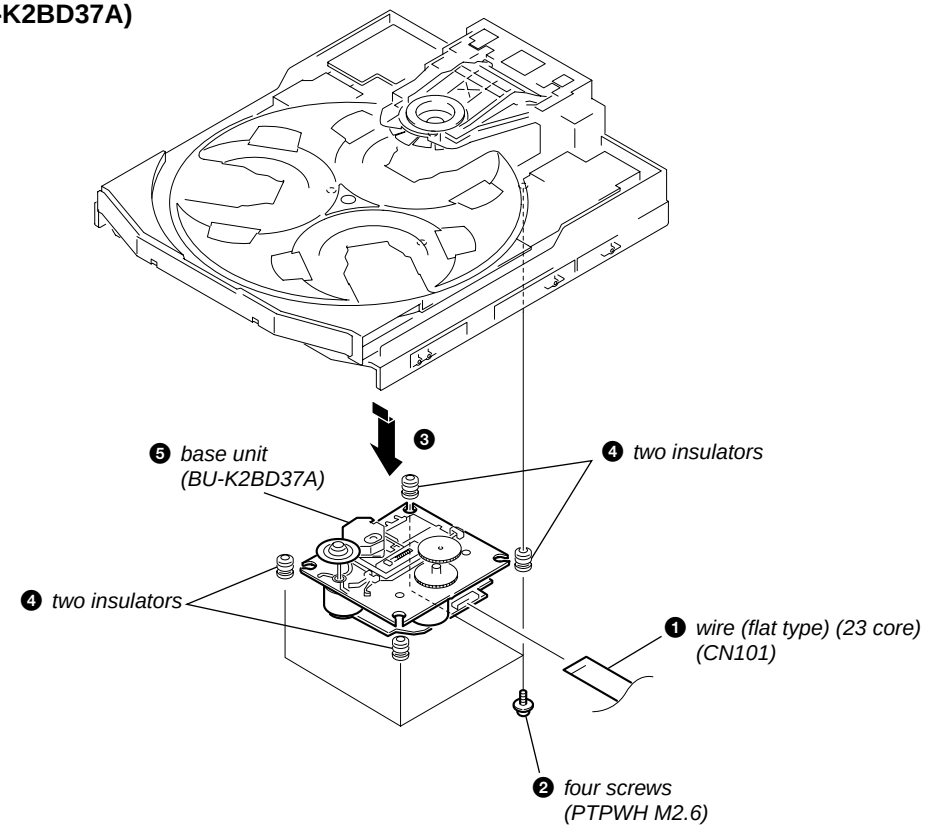
MAIN/POWER AMP BOARDS



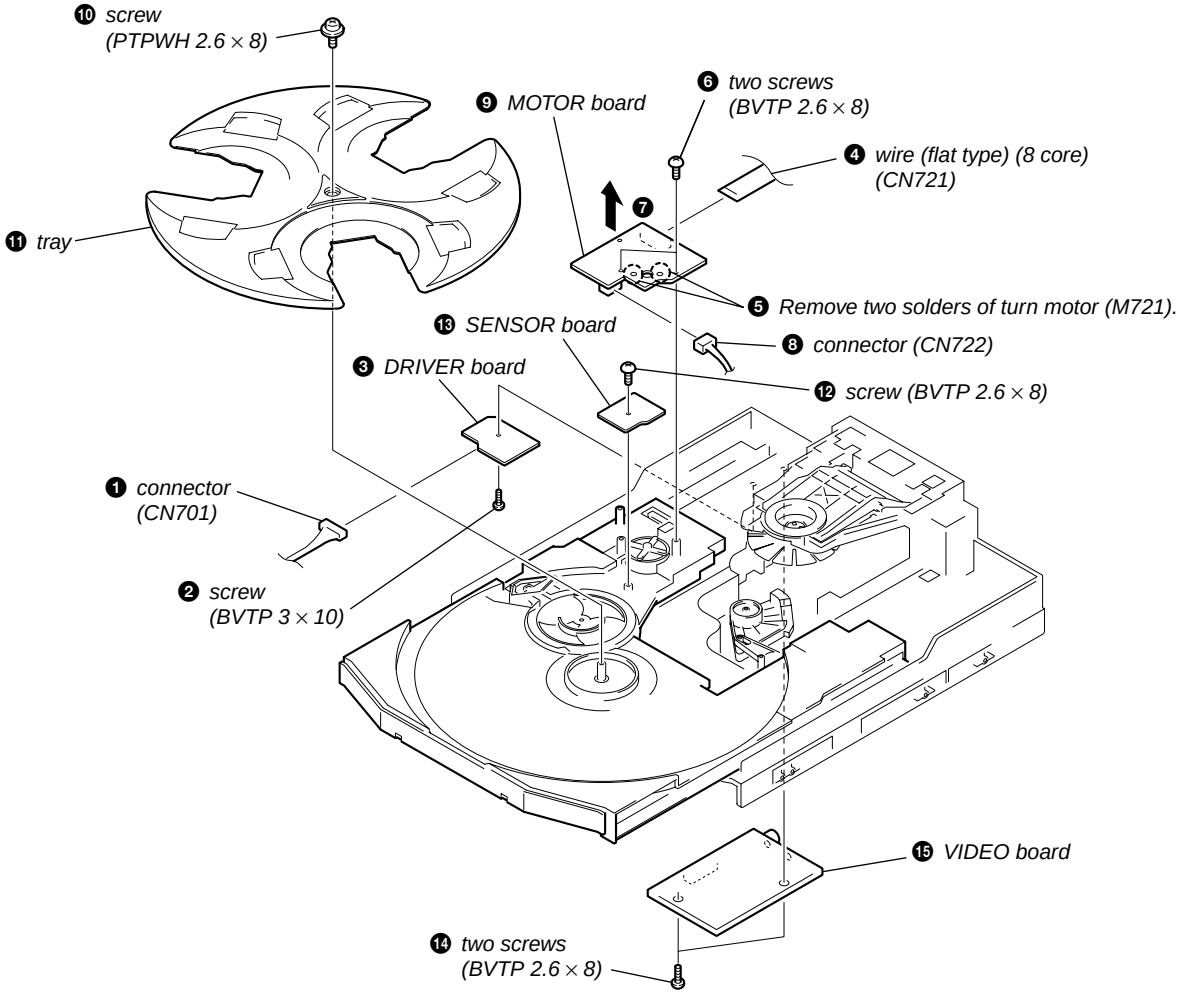
LEAF SW/HEAD (A)/HEAD (B) BOARDS


❶ Remove two solders of plunger (PM1001) leads.
❸ five claws
❷ Remove four solders of capstan/reel motor (M901) lead.
plunger (PM1001)
❶ Remove two solders of plunger (PM1002) leads.
❹ LEAF SW board
plunger (PM1002)
❻ HEAD (A) board
❺ ground point screw
(PTT 2× 4)
❽ HEAD (B) board
❼ ground point screw
(PTT 2× 4)

BASE UNIT (BU-K2BD37A)



DRIVER/MOTOR/SENSOR/VIDEO BOARDS



SECTION 4
TEST MODE

[MC Cold Reset]

• The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press three buttons [■], [ENTER], and [I/⏻] simulta-neously.
2. The fluorescent indicator tube displays “COLD RESET” and the set is reset.

[CD Ship Mode]

• This mode moves the pickup to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Press [CD] button and [I/⏻] button simultaneously.
3. After the "STANDBY" display blinks six times, a message “LOCK” is displayed on the fluorescent indicator tube, and the CD ship mode is set.

[MC Hot Reset]

• This mode resets the set with the preset data kept stored in the memory. The hot reset mode functions same as if the power cord is plugged in and out.

Procedure:

1. Press three buttons [■], [ENTER], and [DISC 1] simultaneously.
2. The fluorescent indicator tube becomes blank instantaneously, and the set is reset.

[CD Service Mode]

• This mode can run the CD sled motor freely. Use this mode, for instance, when cleaning the pickup.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function “CD”.
3. Press three buttons [■], [ENTER], and [OPEN/CLOSE] simultaneously.
4. The CD service mode is selected.
5. With the CD in stop status, turn the shuttle knob clockwise to move the pickup to outside track, or turn the shuttle knob counter-clockwise to inside track.
6. To exit from this mode, perform as follows:
   1) Move the pickup to the most inside track.
   2) Press three buttons in the same manner as step 2.

Note: • Always move the pickup to most inside track when exiting from this mode. Otherwise, a disc will not be unloaded.
• Do not run the sled motor excessively, otherwise the gear can be chipped.

[VACS ON/OFF Mode]

• This mode is used to switch ON and OFF the VACS (Variable Attenuation Control System).

Procedure:

Press the [ENTER] and [SPECTRUM] buttons simultaneously. The message “VACS OFF” or “VACS ON” appears.

[Change-over of MW Tuner Step between 9 kHz and 10 kHz]

• A step of MW channels can be changed over between 9 kHz and 10 kHz.

Procedure:

1. Press [I/⏻] button to turn the set ON.
2. Select the function “TUNER”, and press [TUNER/BAND] button to select the BAND “AM”.
3. Press [I/⏻] button to turn the set OFF.
4. Press [ENTER] and [I/⏻] buttons simultaneously, and the display of fluorescent indicator tube changes to “AM 9 k STEP” or “AM 10 k STEP”, and thus the channel step is changed over.

[GC Test Mode]

• This mode is used to check the software version, FL tube, LED, keyboard and VACS.

Procedure:

1. Press three buttons [■], [ENTER], and [DISC 2] simultaneously.
2. LEDs and fluorescent indicator tube are all turned on.
3. When you want to enter the software version display mode, press [DISC 1]. The model number and destination are displayed.
4. Each time [DISC 1] is pressed, the display changes starting from MC version, GC version, VC version, CD version, CM version, ST version, TC version, TA version, TM version and BR version in this order, and returns to the model number and destination display.
5. When [DISC 3] is pressed while the version numbers are being displayed except model number and destination, year, month and day of the software creation appear. When [DISC 3] is pressed again, the display returns to the software version display. When [DISC 1] is pressed while year, month and day of the software creation are being displayed, the year, month and day of creation of the software versions are displayed in the same order of version display.
6. Press DISC 2 button, and the key check mode is activated.
7. In the key check mode, the fluorescent indicator tube displays “KEY0 VOL0”. Each time a button is pressed, “KEY” value increases. However, once a button is pressed, it is no longer taken into account.
   “VOL” value increases like 1, 2, 3 ... if rotating [VOLUME] knob in “+” direction, or it decreases like 0, 9, 8 ... if rotating in “–” direction.
8. Also when [DISC 3] is pressed after lighting of all LEDs and FL tubes, value of VACS appears.
9. To exit from this mode, press three buttons in the same manner as step 1, or disconnect the power cord.

[MC Test Mode]

• This mode is used to check operations of the respective sections of Amplifier, Tuner, CD and Tape.

Procedure:

1. Press the [I/⏻] button to turn on the set.
2. Press the three buttons of [■], [ENTER] and [DISC 3] simultaneously.
3. A message “TEST MODE” appears on the FL display tube.
4 When [△ (CURSOR UP)] button is pressed, GEQ increases to its maximum and a message “GEQ ALL MA” appears.
5. When [▽ (CURSOR DOWN)] button is pressed, GEQ decreases to its minimum and a message “GEQ ALL M1” appears.
6. When [◁ (CURSOR LEFT)] or [▷ (CURSOR RIGHT)] button is pressed, GEQ is set to flat and a message “GEQ FLAT” appears.
7. When the VOLUME control knob is turned clockwise even slightly, the sound volume increases to its maximum and a message “VOLUME MAX” appears for two seconds, then the display returns to the original display.
8. When the VOLUME control knob is turned counter-clockwise even slightly, the sound volume decreases to its minimum and a message “VOLUME MIN” appears for two seconds, then the display returns to the original display.
9. In the test mode, the default-preset channel is called even when the TUNER is selected and an attempt is made to call the preset channel that has been stored in memory, by operating the Shuttle knob. (It means that the memory is cleared.)
10. When CD is selected and the [EDIT] button is pressed, the disc that is being chucked at this moment becomes the default setting. It means that the default disc only is accessed when any other discs are selected even though the display indication changes accordingly. At the same time, the [DISC SKIP EXCHANGE] and [OPEN/CLOSE] cannot be accepted. (It means that the tray motor and the turntable motor are disabled of their operation.)
11. When a tape is inserted in Deck B and recording is started, the input source function selects VIDEO automatically.
12. When [■] button is pressed to stop recording, the Tape (Deck) B is selected and tape is rewound using the Shuttle knob, tape is rewound, tape is stops at around the record-starting position and playback of the recorded portion of the tape is started. If PAUSE is inserted even once during recording, tape is rewound to the position around the PAUSE position and is played back.
13. When the [CD SYNC HI-DUB] Button is press during playback of Deck B, either normal speed or high speed can be selected by this button.
14. Select the desired loop by pressing the [PLAY MODE] button. Insert a test tape AMS-110A or AMS-RO to Deck A.
15. Press the [SPECTRUM] button to enter the AMS test mode.
16. After a tape is rewound first, the FF AMS is checked, and the mechanism is shut off after detecting the AMS signal twice.
17. Then the REW AMS is checked and the mechanism is shut off after detecting the AMS signal twice.
18. When the check is complete, a message of either OK or NG appears.
19. When you want to exit this mode, press the [I/⏻] button twice. The cold reset is enforced at the same time.

[Aging Mode]

This mode can be used for operation check of CD section and tape deck section.

- If an error occurred:
  The aging operation stops and display status.
- If no error occurs:
  The aging operation continues repeatedly.

1. Operating method of Aging Mode

Turn on the main power and select “CD” of the function.

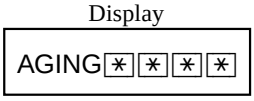
1) Set a disc in DISC1 tray. Select CONTINUE ALL DISCS (press the PLAY MODE button), and REPEAT OFF (press the REPEAT button).
2) Load the tapes recording use into the decks A and B respectively.
3) Press three buttons ■ , ENTER, and DISC SKIP/EX-CHANGE simultaneously.
4) Aging operations of CD and tape are started at the same time.
5) To exit the aging mode, perform [MC Cold Reset].

3. Aging Mode in CD section

1) Display state

- No error occurs

Display



Note:

✳✳✳✳ : Number of aging operations

Error display

E ✳✳ □ ### $$ ⁒⁒

① ② ③ ④ ⑤

① ✳✳	The error No. 00 indicates the newest error. As the error No. increases, it means the older error. When you want to retrieve the error history, press the PLAY MODE button in the case of mechanism error. Or press the REPEAT button in the case of NO DISC error.	
② □	M: Mechanism error	D: No disc error
③ ###	Don’t care	01: FOCUS ERROR 02: GFS ERROR 03: SETUP ERROR
④ $$	High order digits only D: Stopped during closing due to problems other than mechanism. E: Stopped during opening due to problems other than mechanism. C: Stopped during chucking due to problems other than mechanism. F: Stopped during EX-opening due to problems other than mechanism.	01: NO DISC judgment without chucking retry 02: NO DISC judgment after chucking retry
⑤ ⁒⁒	Emergency related errors (High order digits only) 1: Stopped during chuck-up 2: Stopped during chuck-down 3: Time out by EX-OPEN 5: Time out by EX-CLOSE	Status at the time of NO DISC judgment (High order digits only) 1: STOP 2: SETUP 3: TOC READ 4: ACCESS 5: PLAY BACK 6: PAUSE 7: MANUAL SEARCH (PLAY) 8: MANUAL SEARCH (PAUSE)

- When the buttons ■, ENTER and DISC 1 are pressed simultaneously, number of time of the mechanism error and the NO DISC error can be checked.
  Display: EMC✳✳EDC✳✳ ✳✳: Number of times of error (Maximum three times)
  EMC: Mechanism error
  EDC: NO DISC error

- When aging operation is complete, be sure to perform the MC Cold Reset to reset the error history.

2) Operation during aging mode
In the aging mode, the program is executed in the following sequence.
(1) The disc tray opens and closes.
(2) The mechanism accesses DISC 2 and makes an attempt to read TOC. However, since there are no discs, a message "CD2 NO DISC" appears.
(3) The mechanism accesses DISC 3 and a message "CD3 NO DISC" appears.
(4) The disc tray turns to select a disc1.
(5) A disc is chucked.
(6) TOC of disc is read.
(7) The pickup accesses to the track 1, and playing 2 seconds.
(8) The pickup accesses to the last track, and playing 2 seconds.
(9) Every time when an aging operation of step 1 to step 8 is complete, the display "AGING[*][*][*][*]" value increases as the number of aging operations is counted up.
(10) Returns to step 1.

3. Aging Mode in Tape Deck section
1) Display state
• No error occurs
Display action now
• Error occurred
Display action last time

NO.	Display action	Action contents	Final timing
1	TAPE A AG-1	Rewind the TAPE A, B	The top of tape
2	TAPE A AG-2	FWD play the TAPE A	2 minutes playing
3	TAPE A AG-3	F.F. the TAPE A	20 second FF or the end of tape
4	TAPE A AG-4	REV play the TAPE A	2 minutes playing
5	TAPE A AG-5	Rewind the TAPE A	The top of tape
6	TAPE B AG-2	FWD play the TAPE B	2 minutes playing
7	TAPE B AG-3	F.F. the TAPE B	20 second FF or the end of tape
8	TAPE B AG-4	REV play the TAPE B	2 minutes playing
9	TAPE B AG-5	Rewind the TAPE B	The top of tape

2) Operation during aging mode
In the aging mode, the program is executed in the following sequence.
(1) Rewind is executed up to the top of tape A and B.
(2) A tape on FWD side is played for 2 minutes.
(3) FF is executed up to either made for 20 second or the end of tape.
(4) A tape is reversed, and the tape on REV side is played for 2 minutes.
(5) Rewind is executed up to the top of tape.
(6) Returns to step 2, and repeat steps from 2 to 5.

[Function Change Mode]
* Select either VIDEO or MD of the external FUNCTION input.

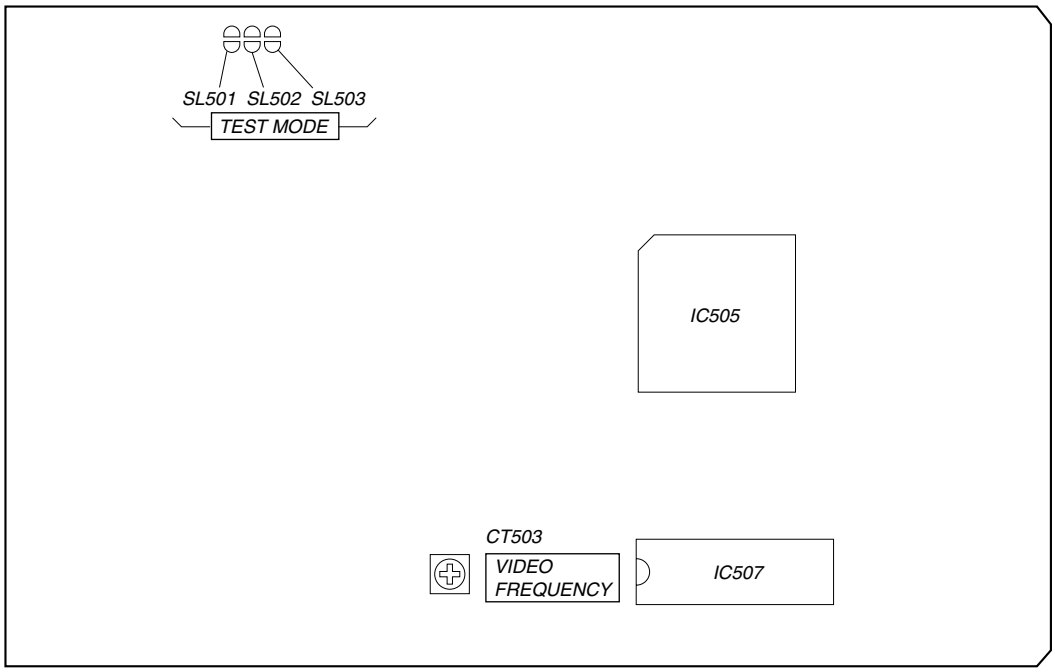
Procedure:
1. Turn on the power.
2. Press the two buttons [ENTER] and [I/⏻] at the same time.
The main power is turned on and the other function of the previous function is selected and displayed. "MD" or "VIDEO".

VIDEO CD COLOR-BARS MODE

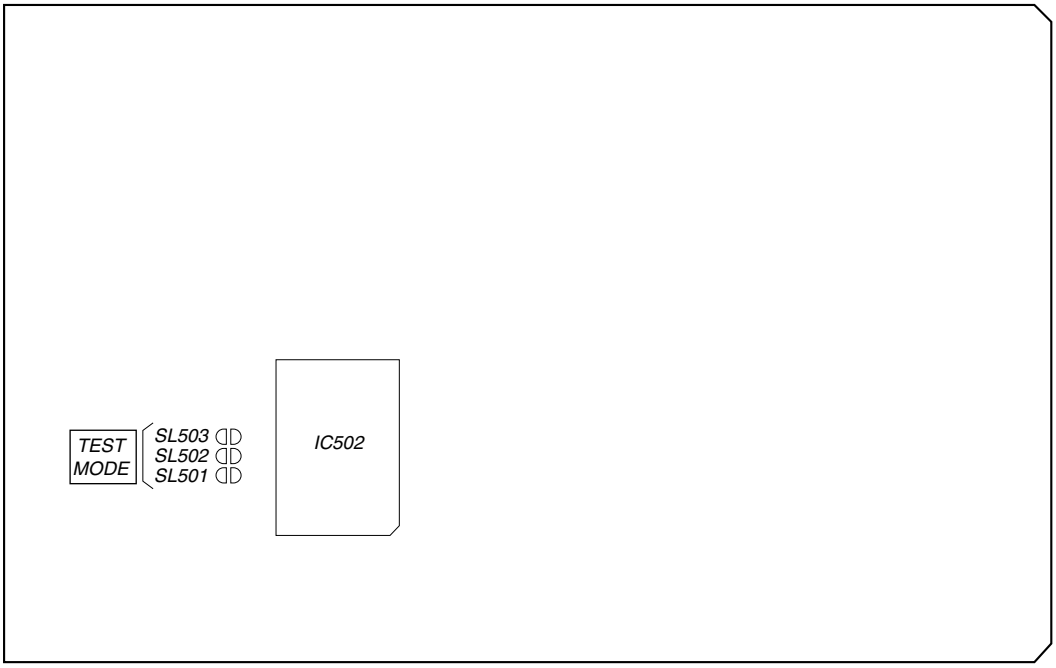
On this mode, the data of the color-bars signal as a picture signal and the 1kHz sine wave signal as a sound signal are output by the CD mechanism control microcomputer (IC502) for video CD signal check. When measurement of the voltage and waveform on the VIDEO board, perform it in this mode.
For reference, the color-bars signal can be observed at J302 (VIDEO OUT) and the sound signal can be observed at J101 (VIDEO/MD (AUDIO) OUT) using an oscilloscope.

1. Connect the lead wire to both ends of the land of SL503 of the VIDEO board.
2. Turn the power on. Press CD button to select CD.
3. After 2 or 3 seconds later, connect the lead wire.
4. After measuring, remove the lead wire connected.

[VIDEO BOARD] (SIDE A)



[VIDEO BOARD] (SIDE B)



SECTION 5
MECHANICAL ADJUSTMENTS

Precaution

1. Clean the following parts with a denatured alcohol-moistened swab:
   - record/playback heads
   - erase head
   - capstan
   - pinch rollers
   - rubber belts
   - idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
FWD back tension	CQ-102C	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
REV	CQ-102RC	3.06 N • m to 6.96 N • m 31 to 71 g • cm (0.43 – 0.98 oz • inch)
REV back tension	CQ-102RC	0.19 N • m to 0.58 N • m 2 to 6 g • cm (0.02 – 0.08 oz • inch)
FF/REW	CQ-201B	6.96 N • m to 14.02 N • m 71 to 143 g • cm (0.98 – 1.99 oz • inch)
FWD tension	CQ-403A	9.80 N • m 100 g or more (3.53 oz or more)
REV tension	CQ-403R	9.80 N • m 100 g or more (3.53 oz or more)

SECTION 6
ELECTRICAL ADJUSTMENTS

DECK SECTION 0 dB=0.775 V

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
7. Switches and controls should be set as follows unless otherwise specified.

• Test Tape

Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

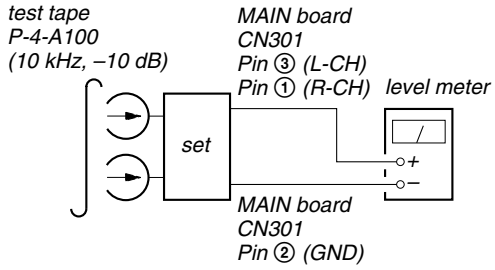
Record/Playback Head Azimuth Adjustment

DECK A **DECK B**

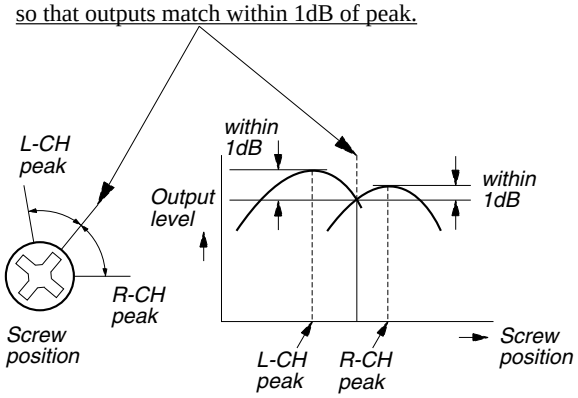
Note: Perform this adjustments for both decks

Procedure:

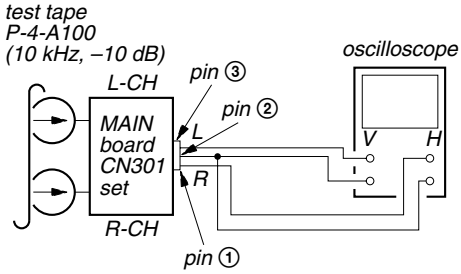
1. Mode: Playback

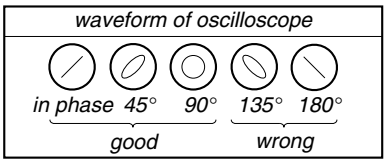


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.



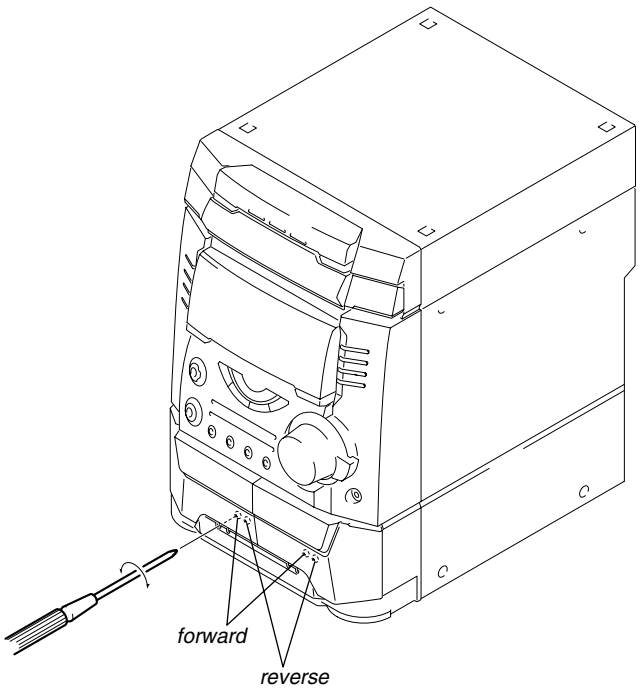
3. Mode: Playback





4. After the adjustments, apply suitable locking compound to the pats adjusted.

Adjustment Location: Playback Head (Deck A).
Record/Playback/Erase Head (Deck B).



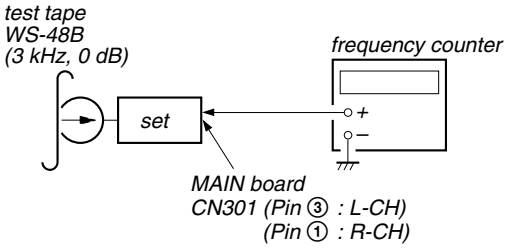
Tape Speed Adjustment DECK B

Note: Start the Tape Speed adjustment as below after setting to the test mode.
In the test mode, the tape speed is high during pressing the CD SYNC HI-DUB button.

Procedure:

1. Turn the power switch on.
2. Press the ■ button, ENTER button and DISC 3 button simultaneously.
(The "TEST MODE" on the fluorescent indicator tube display while in the test mode.)
To exit from the test mode, press the I/⏻ button.

Mode: Playback



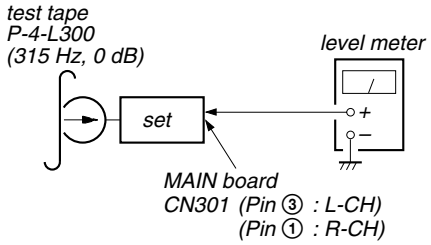
1. Insert the WS-48B into the deck B.
2. Press the ◁▷ button on the deck B.
3. Press the CD SYNC HI-DUB button in playback mode.
Then at HIGH speed mode.
4. Adjust RV1001 on the LEAF SW board do that frequency counter reads 6,000 ± 30 Hz.
5. Press the CD SYNC HI-DUB button.
Then back to NORMAL speed mode.
6. Adjust RV1002 on the LEAF SW board so that frequency counter reads 3,000 ± 15 Hz.

Adjustment Location: LEAF SW board

Playback Level Adjustment DECK A DECK B

Procedure:

Mode: Playback



Deck A is RV302 (L-CH) and RV352 (R-CH), Deck B is RV303 (L-CH) and RV353 (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level:

CN301 PB level: 301.5 to 338.3 mV (–8.2 to –7.2 dB) level difference between the channels: within ±0.5 dB

Adjustment Location: MAIN board

Sample Volue of Wow and Flutter: 0.3% or less W. RMS
(WS-48B)

REC Bias Adjustment DECK B

Procedure:

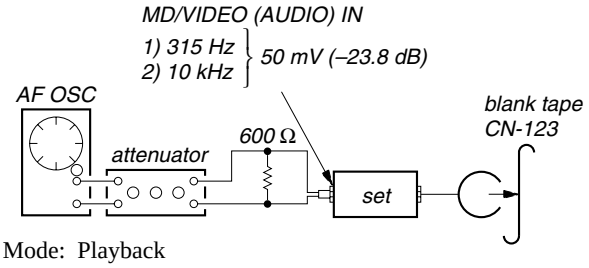
INTRODUCTION

When set to the test mode performed in Tape Speed Adjustment, when the tape is rewound after recording, the "REC memory mode" which rewinds only the recorded portion and playback is set.

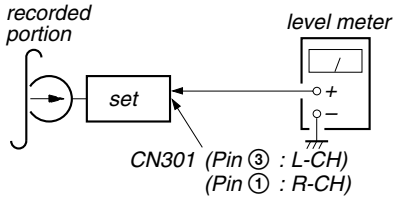
This "REC memory mode" is convenient for performing this adjustment. During recording, the input signal FUNCTION will automatically switch to VIDEO.

(If do not operation of stopped from recording complete, and rotate of shuttle knob then rewind to recording start position.)

1. Press MD (VIDEO) button to select VIDEO. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck B.
3. After press REC PAUSE/START button, press REC PAUSE/START button, then recording start.
4. Mode: Record



5. Mode: Playback



6. Confirm playback the signal recorded in step 3 become adjustable level as follows.
   If these levels do not adjustable level, adjustment the RV304 (L-CH) and RV354 (R-CH) on the AUDIO board to repeat steps 4 and 5.

Adjustable Level: Playback output of 315 Hz to playback output of 10 kHz: ±1.0 dB

Adjustment Location: MAIN board

REC Level Adjustment DECK B

Procedure:

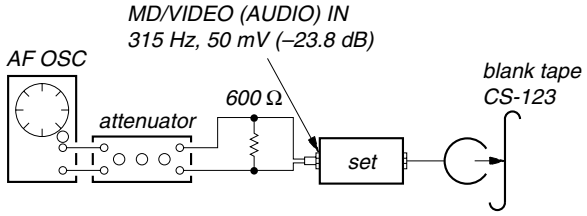
INTRODUCTION

When set to the test mode performed in Tape Speed Adjustment, when the tape is rewound after recording, the "REC memory mode" which rewinds only the recorded portion and playback is set.

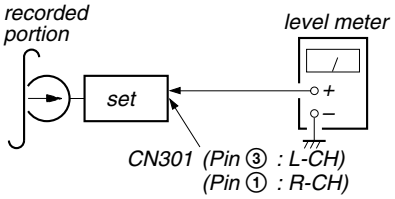
This "REC memory mode" is convenient for performing this adjustment. During recording, the input signal FUNCTION will automatically switch to VIDEO.

(If do not operation of stopped from recording complete, and rotate of shuttle knob then rewind to recording start position.)

1. Press MD (VIDEO) button to select VIDEO. (This step is not necessary if the above test mode has already been set.)
2. Insert a tape into deck B.
3. After press REC PAUSE/START button, press REC PAUSE/START button, then recording start.
4. Mode: Record



5. Mode: Playback



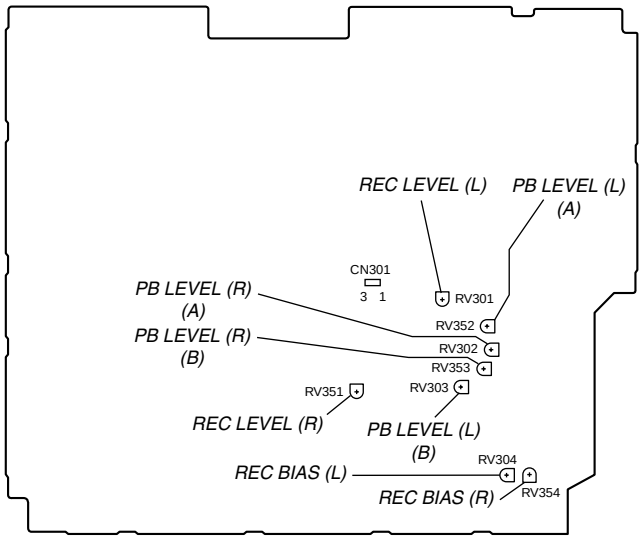
6. Confirm playback the signal recorded in step 3 become adjustable level as follows.
   If these levels do not adjustable level, adjustment the RV301 (L-CH) and RV351 (R-CH) on the MAIN board to repeat steps 4 and 5.

Adjustable Level:

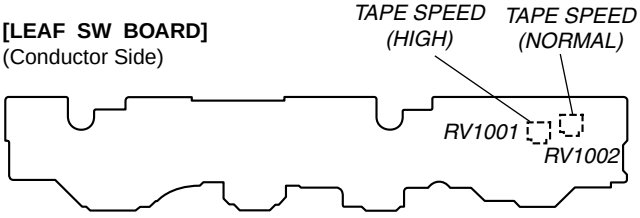
CN301 PB level: 47.2 to 53.0 mV (–24.3 to –23.3 dB)

Adjustment Location: MAIN board

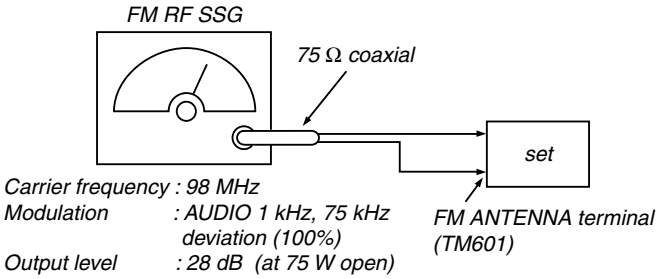
[MAIN BOARD] (Component Side)



[LEAF SW BOARD]
(Conductor Side)



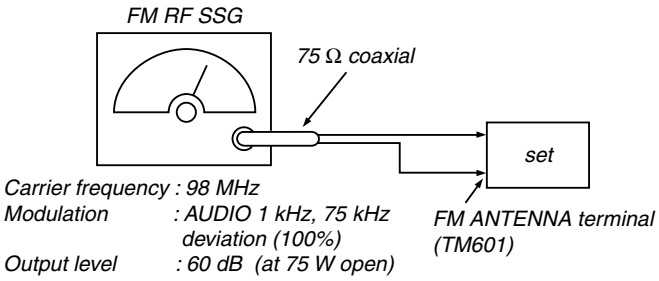
FM Tuned Level Adjustment


FM RF SSG
75 Ω coaxial
set
Carrier frequency : 98 MHz
Modulation : AUDIO 1 kHz, 75 kHz deviation (100%)
Output level : 28 dB (at 75 W open)
FM ANTENNA terminal (TM601)

Procedure:
1. Supply a 28 dB 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Adjust RV611 to the point (moment) when the TUNED indicator on the fluorescent indication tube will change from going off to going on.

Adjustment Location: MAIN board

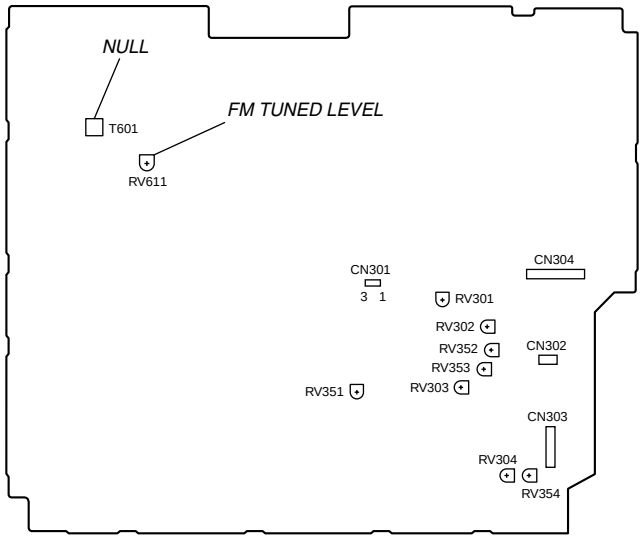
Null Adjustment


FM RF SSG
75 Ω coaxial
set
Carrier frequency : 98 MHz
Modulation : AUDIO 1 kHz, 75 kHz deviation (100%)
Output level : 60 dB (at 75 W open)
FM ANTENNA terminal (TM601)

Procedure:
1. Supply a 60 dB 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98 MHz.
3. Measure voltage between pin ㉑ of IC 601. Adjust T601 until the voltage becomes 0 V.

Adjustment Location: MAIN board

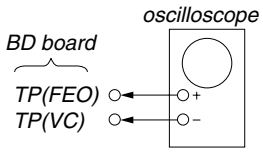
[MAIN BOARD] (Component Side)



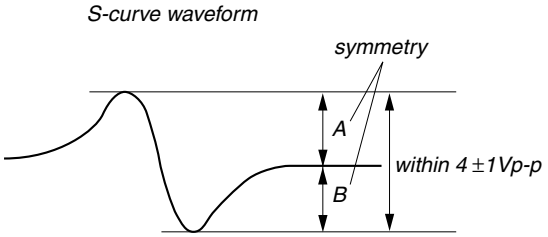
CD SECTION

Note :
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S-Curve Check



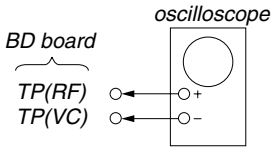
Procedure :
1. Connect oscilloscope to TP (FEO).
2. Connect between TP (FEI) and TP (VC) by lead wire.
3. Connect between TP (AGCCON) and TP (GND) by lead wire.
4. Turn Power switch on.
5. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
6. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 4 ±1 Vp-p.



7. After check, remove the lead wire connected in step 2 and 3.

Note :
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

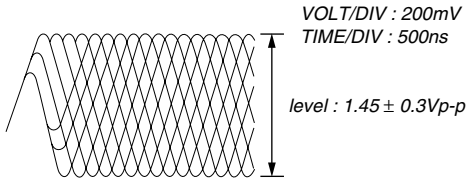
RF Level Check



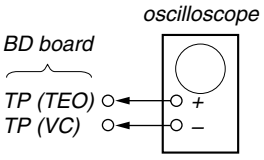
Procedure :
1. Connect oscilloscope to TP (RF).
2. Connect between TP (AGCCON) and TP (GND) by lead wire.
3. Turned Power switch on.
4. Load a disc (YEDS-18) and playback.
5. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.
6. After check, remove the lead wire connected in step 2.

Note: Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform



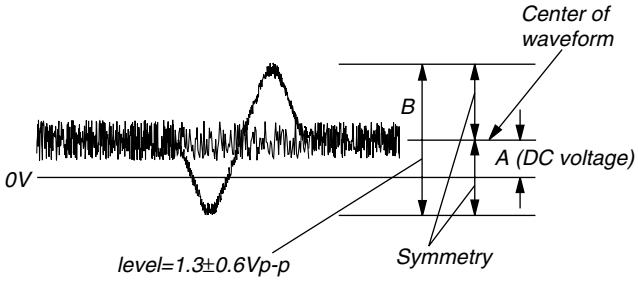
E-F Balance (1 Track Jump) Check



Procedure:

1. Connect oscilloscope to TP (TEO) and TP (VC) board.
2. Turned Power switch on.
3. Load a disc (YEDS-18) and playback the number five track.
4. Press the ◁▷ button. (Becomes the 1 track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.

1 track jump waveform



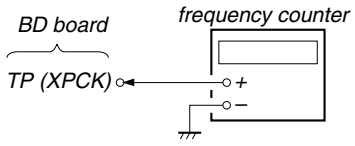
Specification level: $\frac{A}{B}$ x 100=less than ±22%

6. After check, remove the lead wire connected in step 1.

RF PLL Free-Run Frequency Check

Procedure :

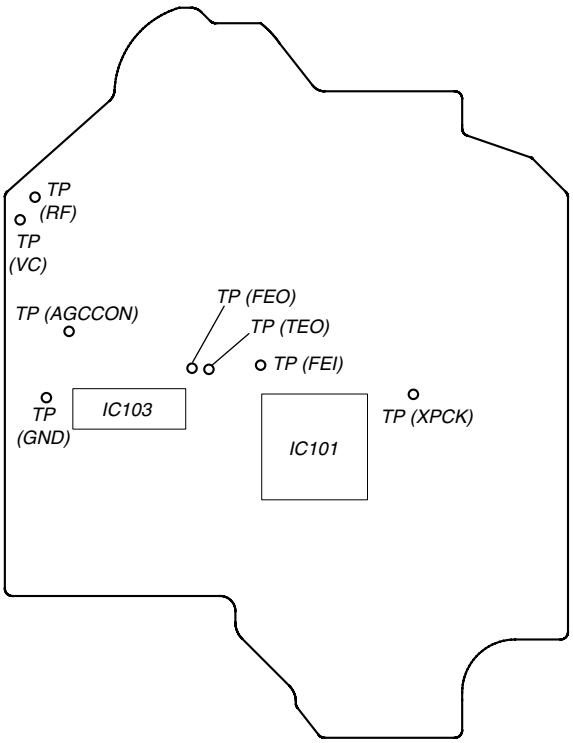
1. Connect frequency counter to test point (XPCK) with lead wire.



2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :

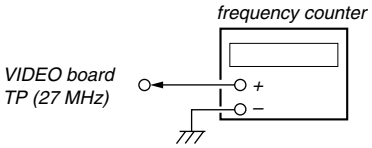
[BD BOARD] (SIDE B)



VIDEO SECTION

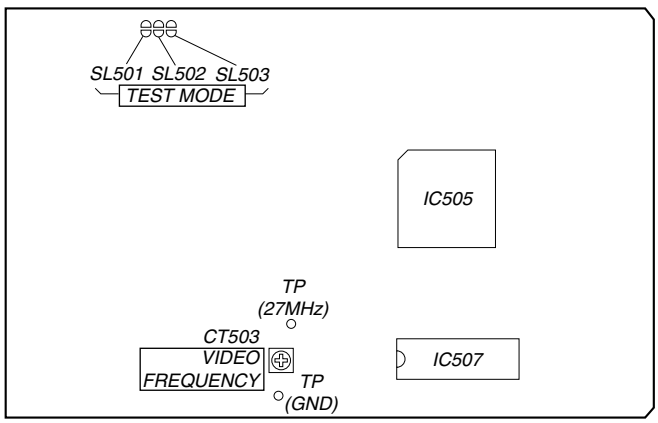
VIDEO Frequency Adjustment

1. Connect the frequency counter to check point of the VIDEO board.
2. Adjust CT503 of the VIDEO board so that the frequency counter read 27MHz ± 80Hz at STOP condition.

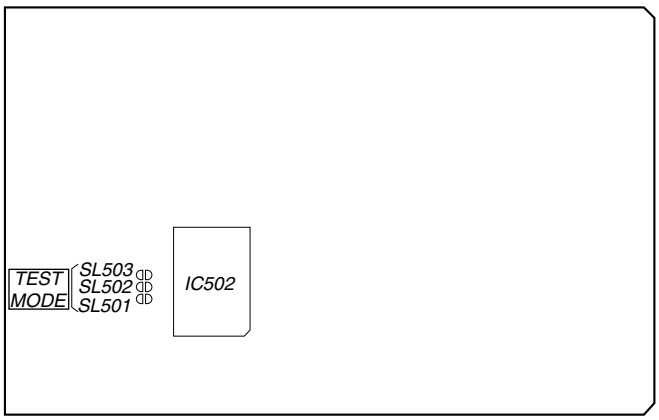


Adjustment Location :

[VIDEO BOARD] – SIDE A –



[VIDEO BOARD] – SIDE B –



SECTION 7
DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

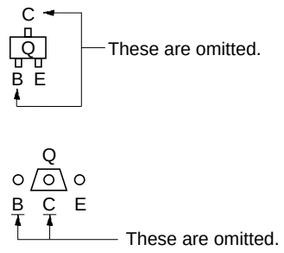
- B+ : B+ Line.
- B− : B– Line.
- : adjustment for repair.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - : FM
  - : AM
  - : PB (DECK A)
  - : PB (DECK B)
  - : REC (DECK B)
  - : CD (AUDIO)
  - : digital out
  - : CD (VIDEO)
  - : VIDEO (C)
  - : VIDEO (Y)
- Abbreviation
  EA : Saudi Arabia model

Note on Printed Wiring Boards:

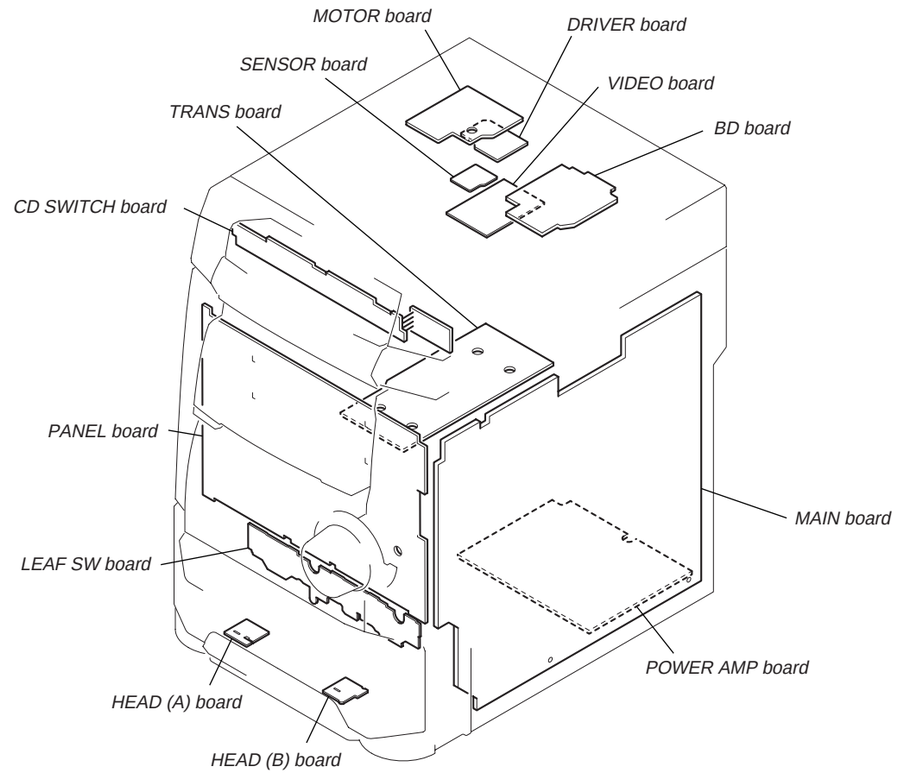
- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Pattern from the side which enables seeing.

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor.



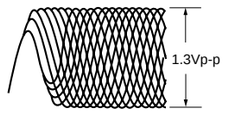
7-1. CIRCUIT BOARDS LOCATION



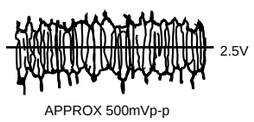
Waveforms

– CD SECTION –

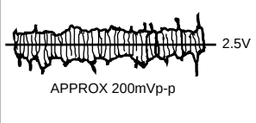
① IC101 ㊿ RFAC



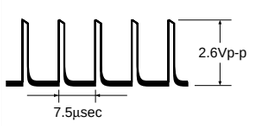
② IC101 ㊶ TE



③ IC101 ㊴ FE

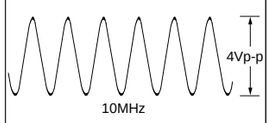


④ IC101 ㉕ MDP

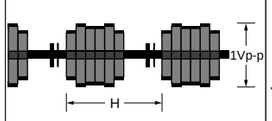


– VIDEO SECTION –

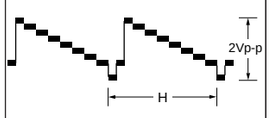
① IC502 ⑬ XOUT



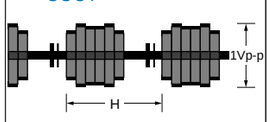
② IC505 ㉕ COUT



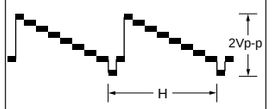
③ IC505 ㊾ YOUT



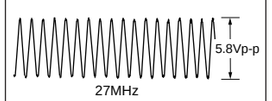
④ IC304 ⑨ COUT



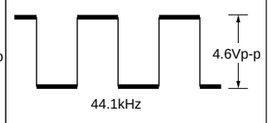
⑤ IC304 ⑮ YOUT



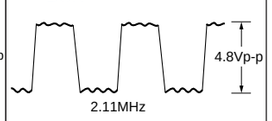
⑥ IC509 ① XT1



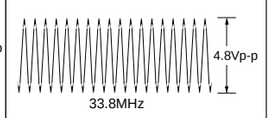
⑦ IC509 ⑲ LRCK



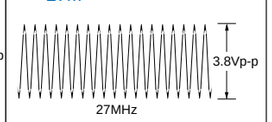
⑧ IC509 ⑰ BCK



⑨ IC504 ⑧ 384FS

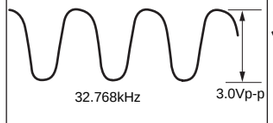


⑩ IC504 ⑥ 27M

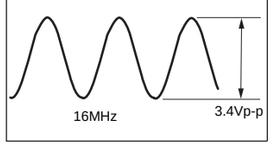


– MAIN BOARD –

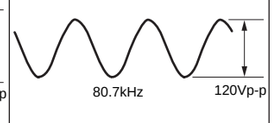
① IC401 ⑪ STOP MODE



② IC401 ⑬ STOP MODE

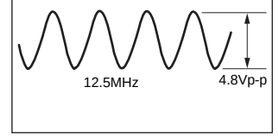


③ T301 ④ TAPE B REC MODE

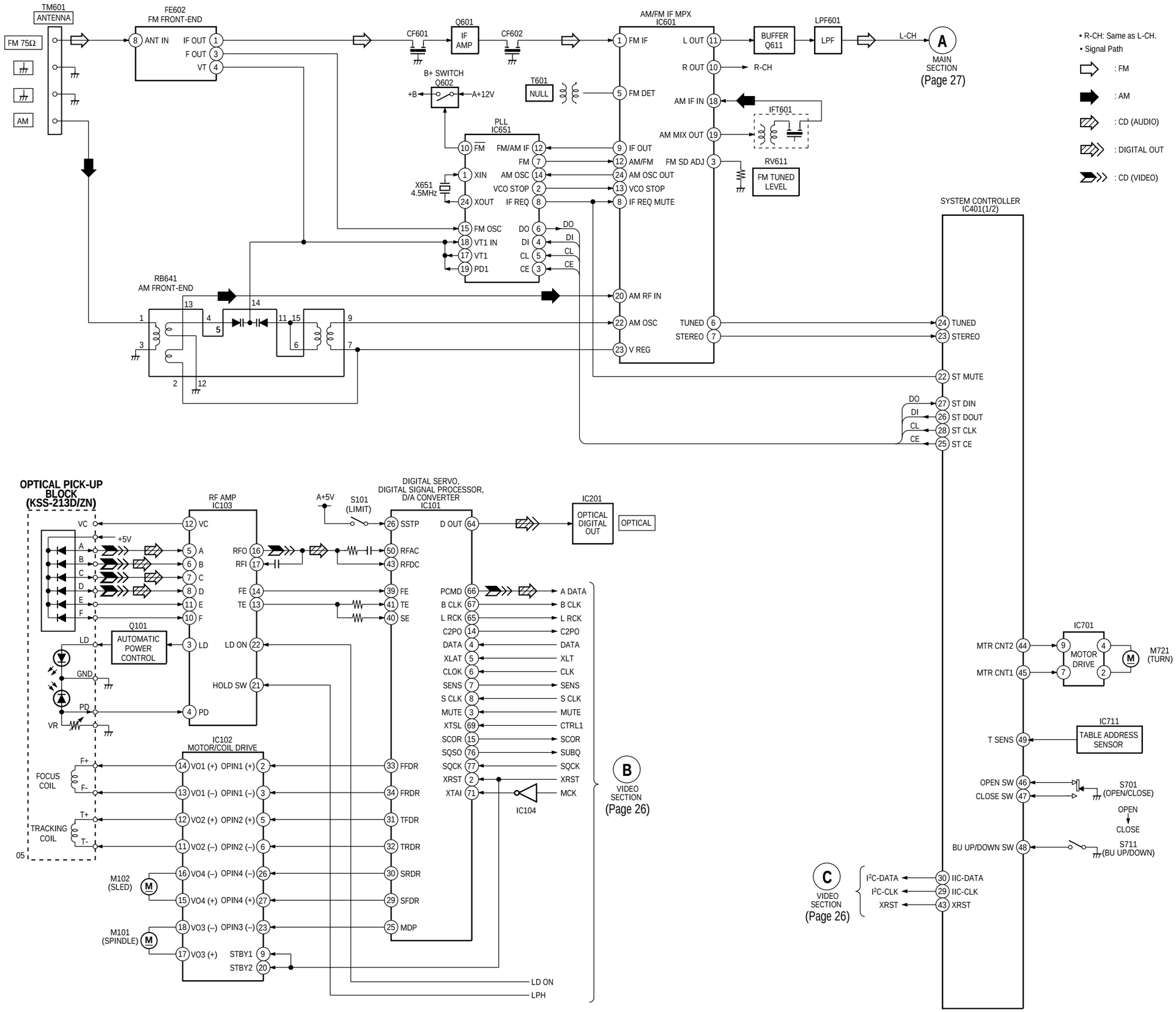


– PANEL BOARD –

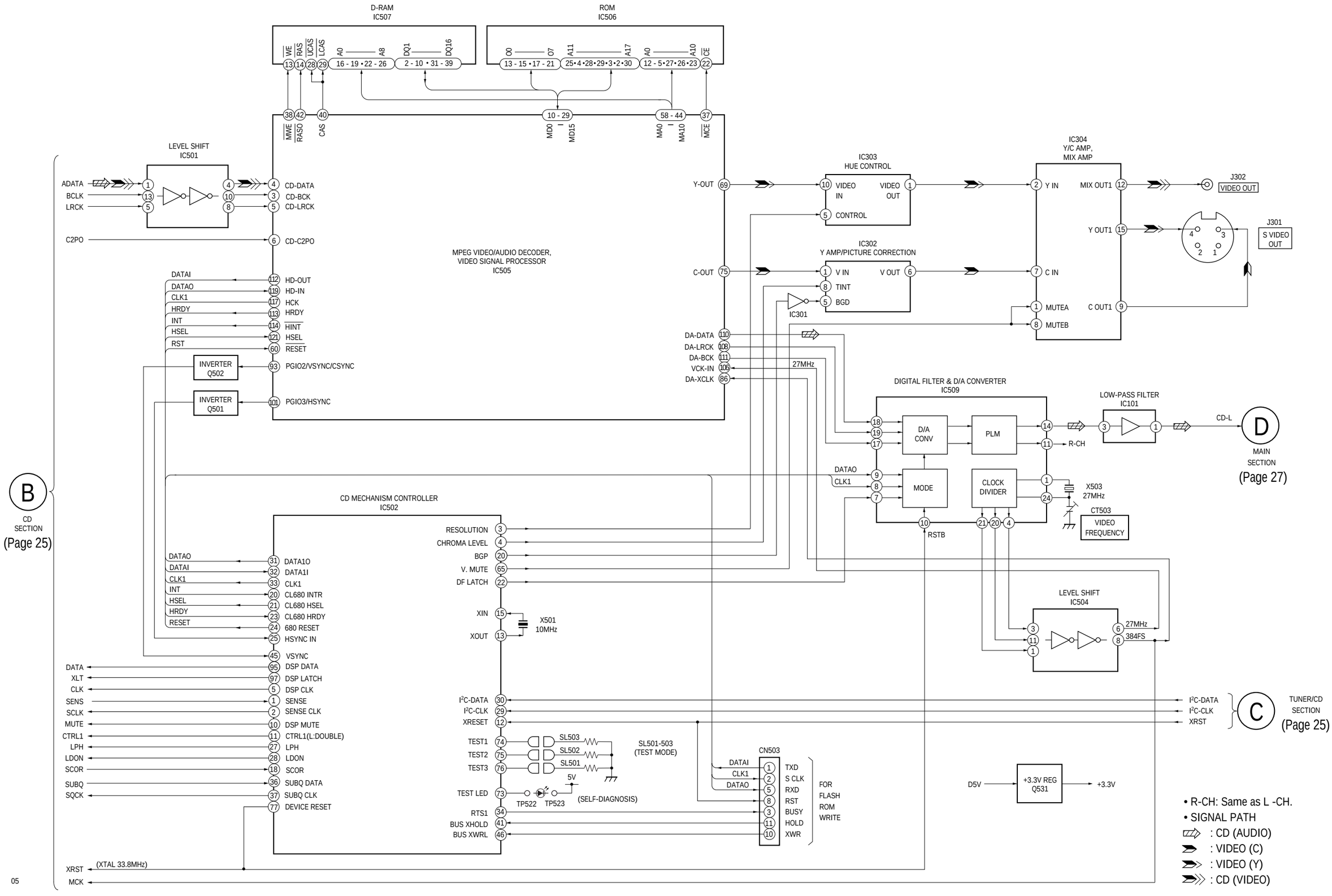
① IC601 ㉛ STOP MODE



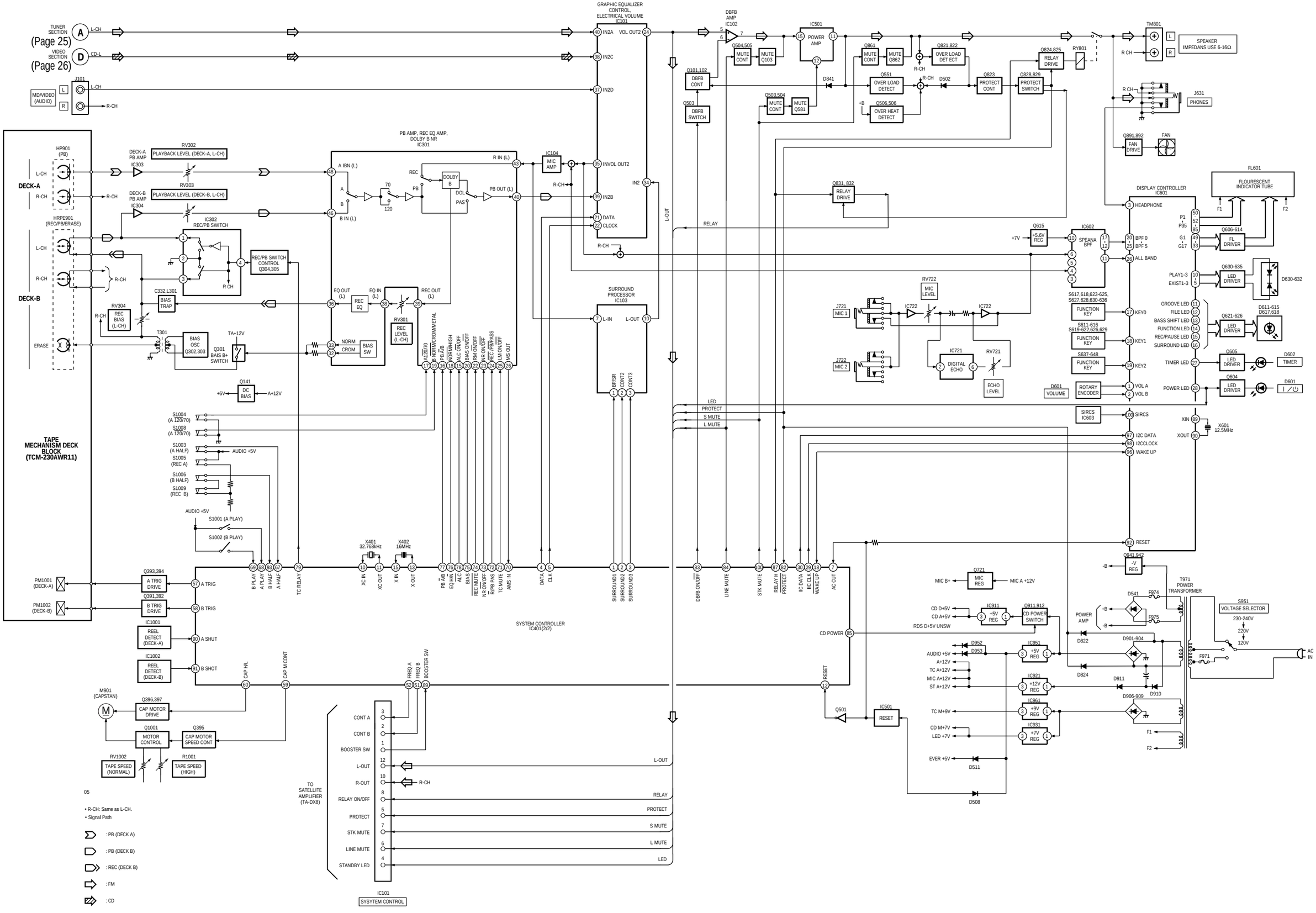
7-2. BLOCK DIAGRAMS
– TUNER/CD SECTION –



– VIDEO SECTION –



– MAIN SECTION –



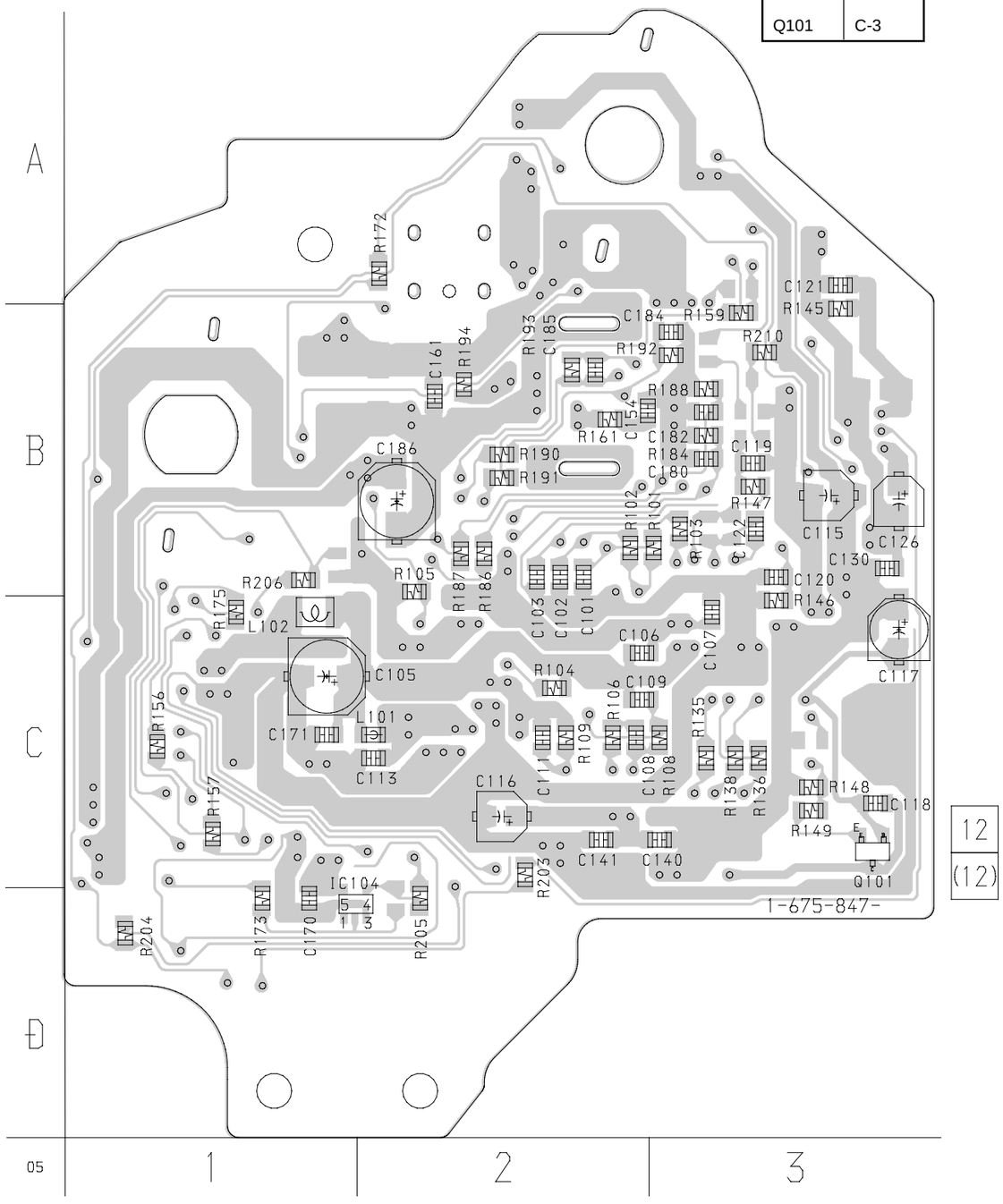
7-3. PRINTED WIRING BOARD – BD SECTION –

• See page 23 for Circuit Boards Location.

【BD BOARD】(SIDE A)

• Semiconductor Location

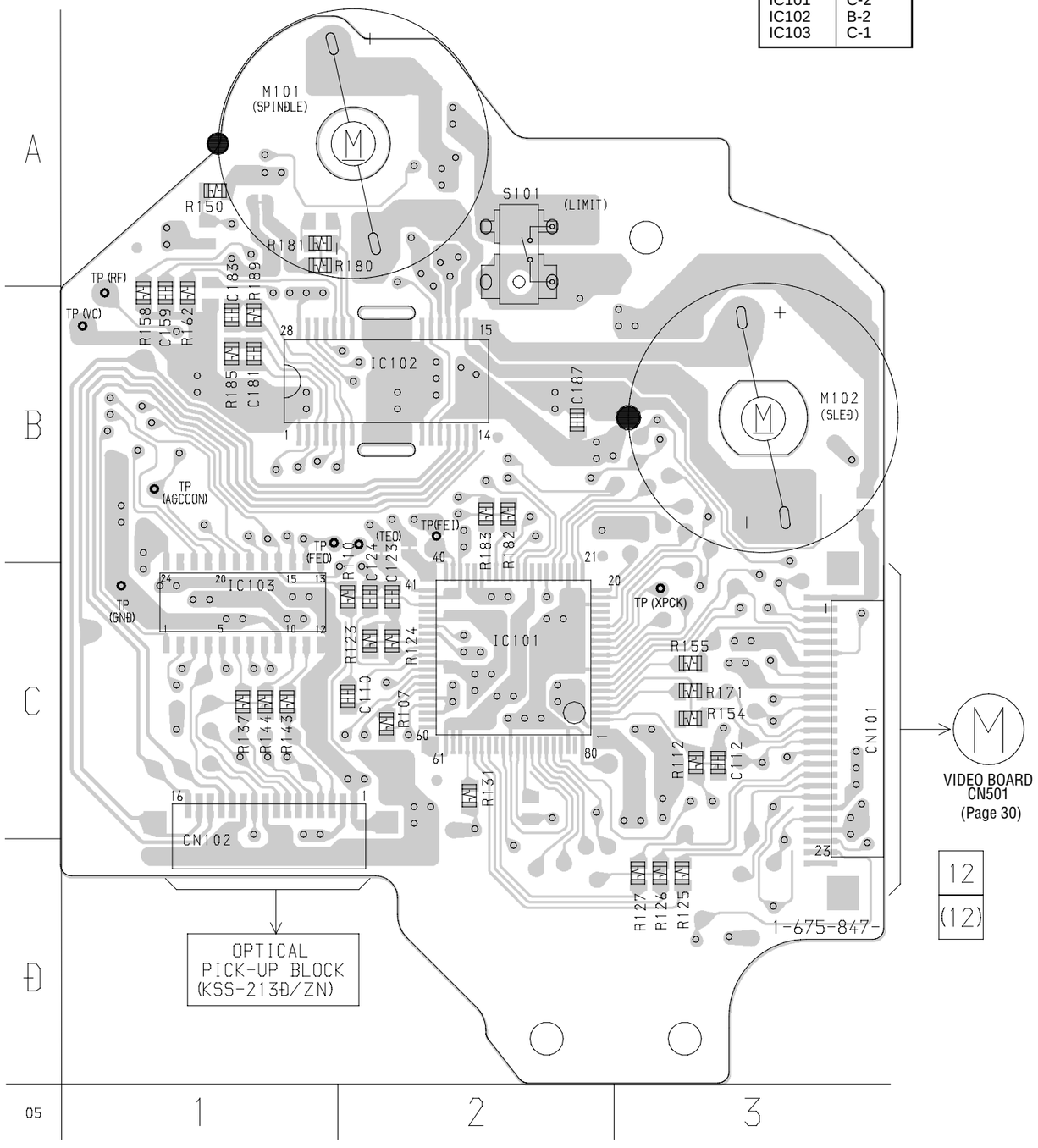
Ref. No.	Location
IC104	D-1
Q101	C-3



【BD BOARD】(SIDE B)

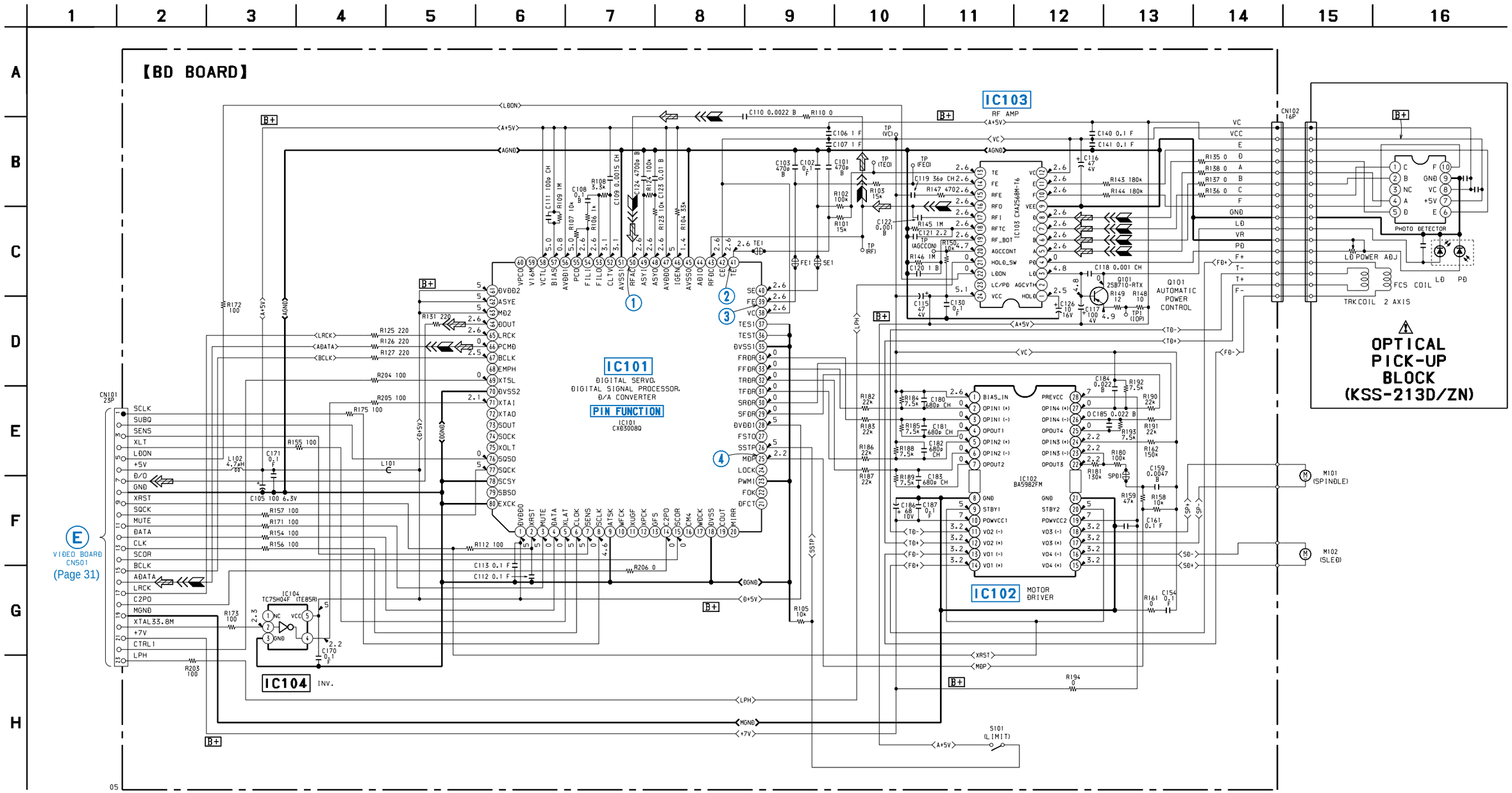
• Semiconductor Location

Ref. No.	Location
IC101	C-2
IC102	B-2
IC103	C-1



7-4. SCHEMATIC DIAGRAM – BD SECTION –

- See page 24 for Waveforms.
- See page 57 for IC Block Diagrams.



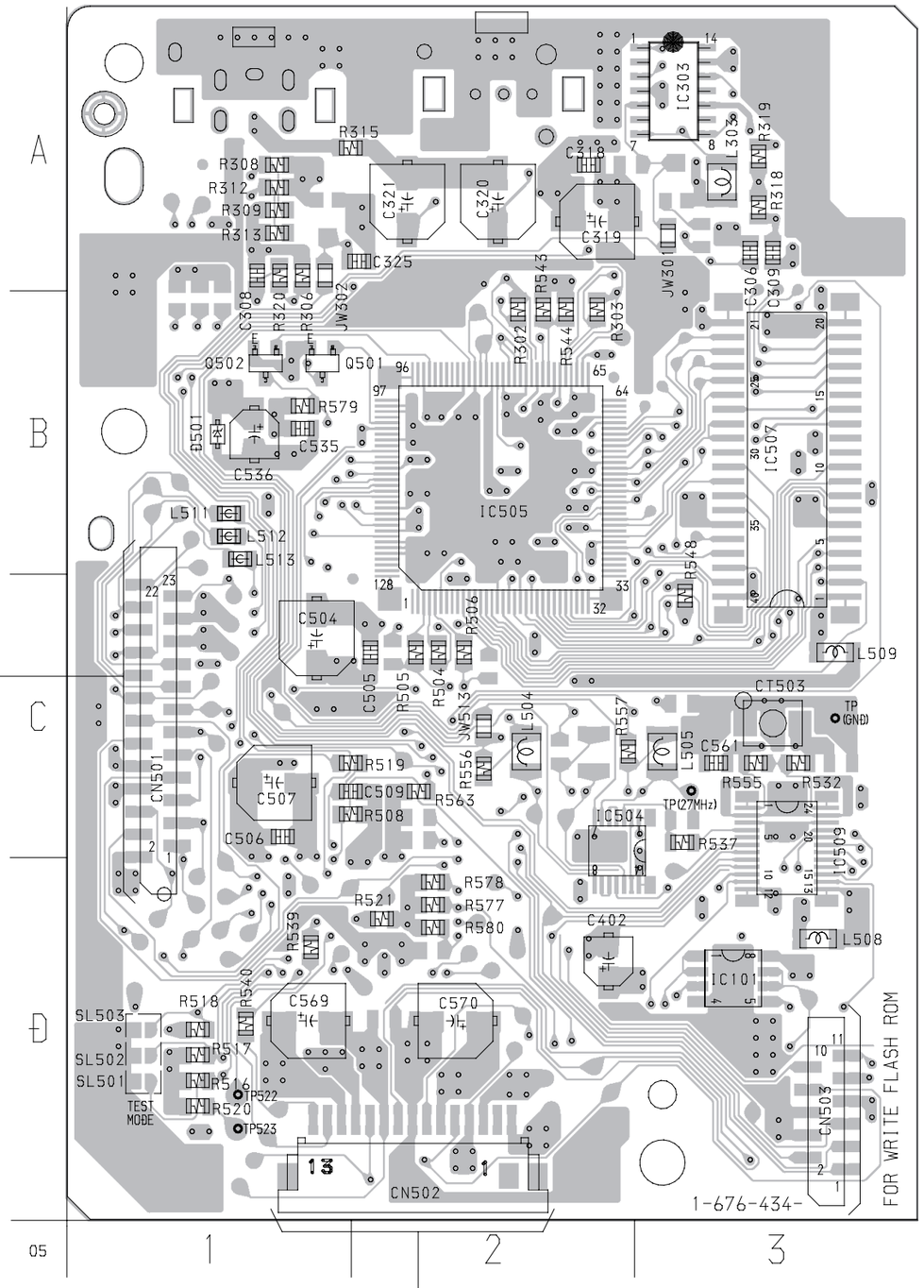
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD STOP

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

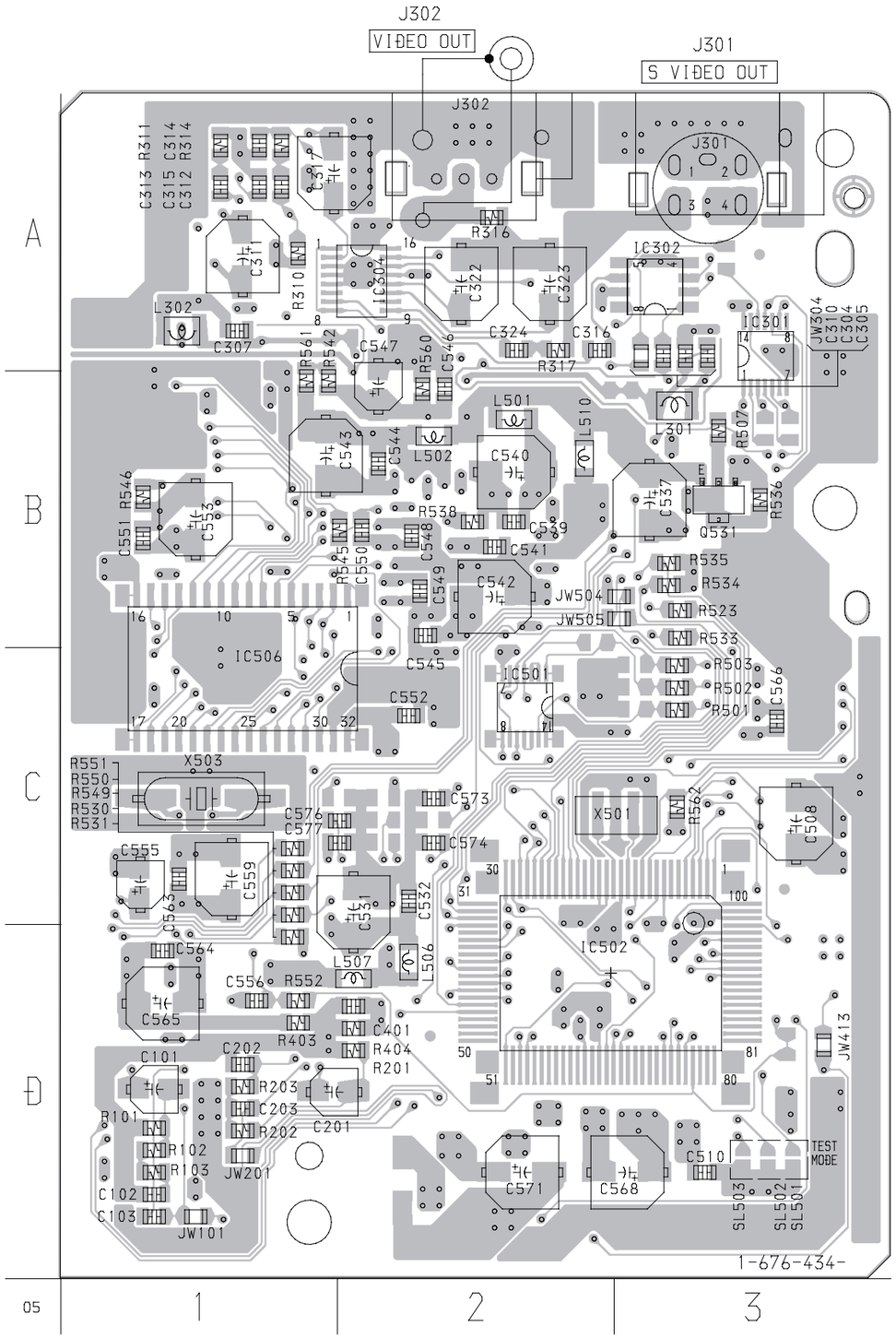
7-5. PRINTED WIRING BOARD – VIDEO SECTION –

• See page 23 for Circuit Boards Location.

【VIÐEO BOARÐ】(SIÐE A)



【VIÐEO BOARÐ】(SIÐE B)



• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D501	B-1	IC507	B-3
		IC509	C-3
IC101	D-3		
IC303	A-3	Q501	B-1
IC504	C-2	Q502	B-1
IC505	B-2		

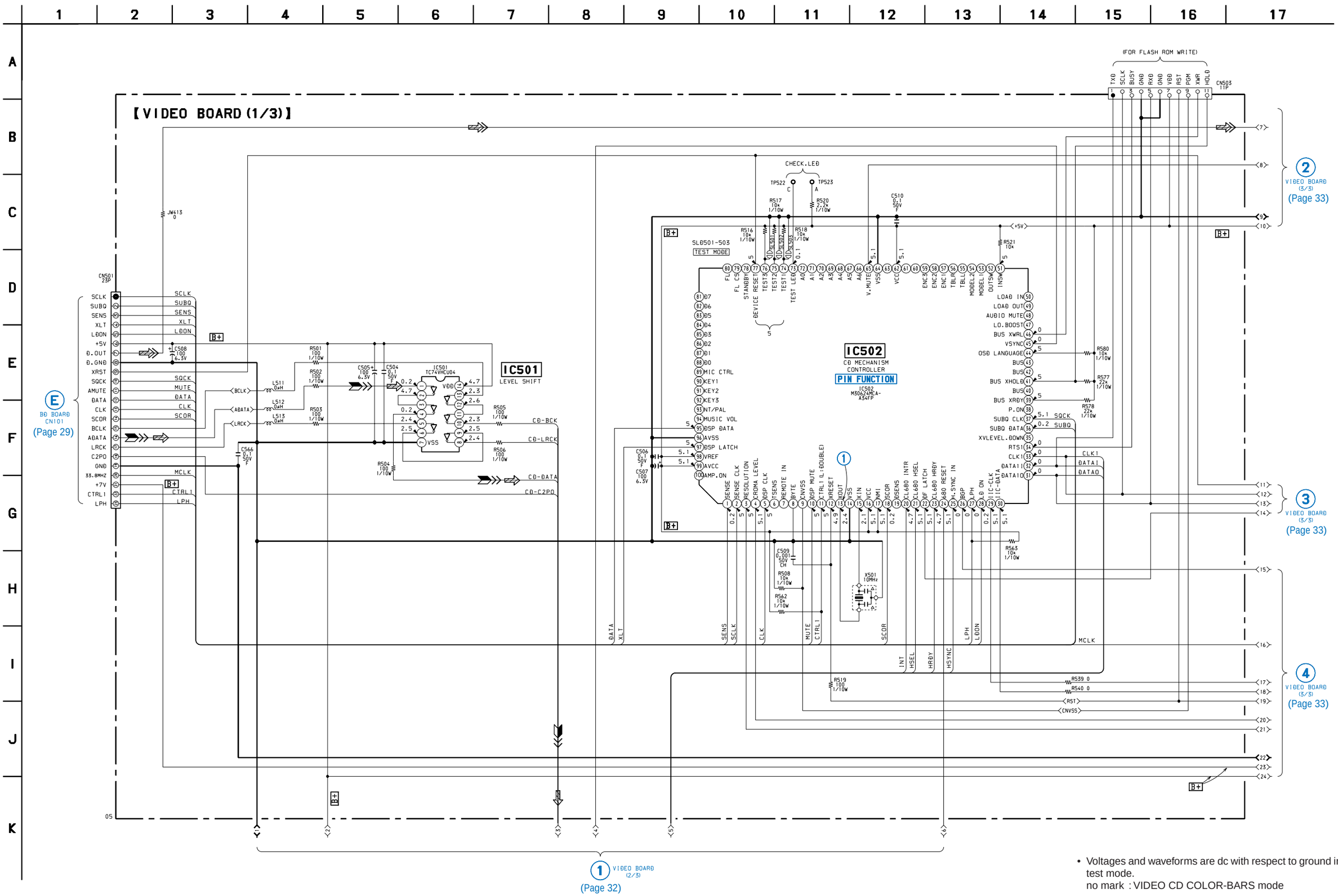
• **Semiconductor Location**

Ref. No.	Location
IC301	A-3
IC302	A-3
IC304	A-2
IC501	C-2
IC502	D-2
IC506	C-1
Q531	B-3

30

7-6. SCHEMATIC DIAGRAM – VIDEO (1/3) SECTION –

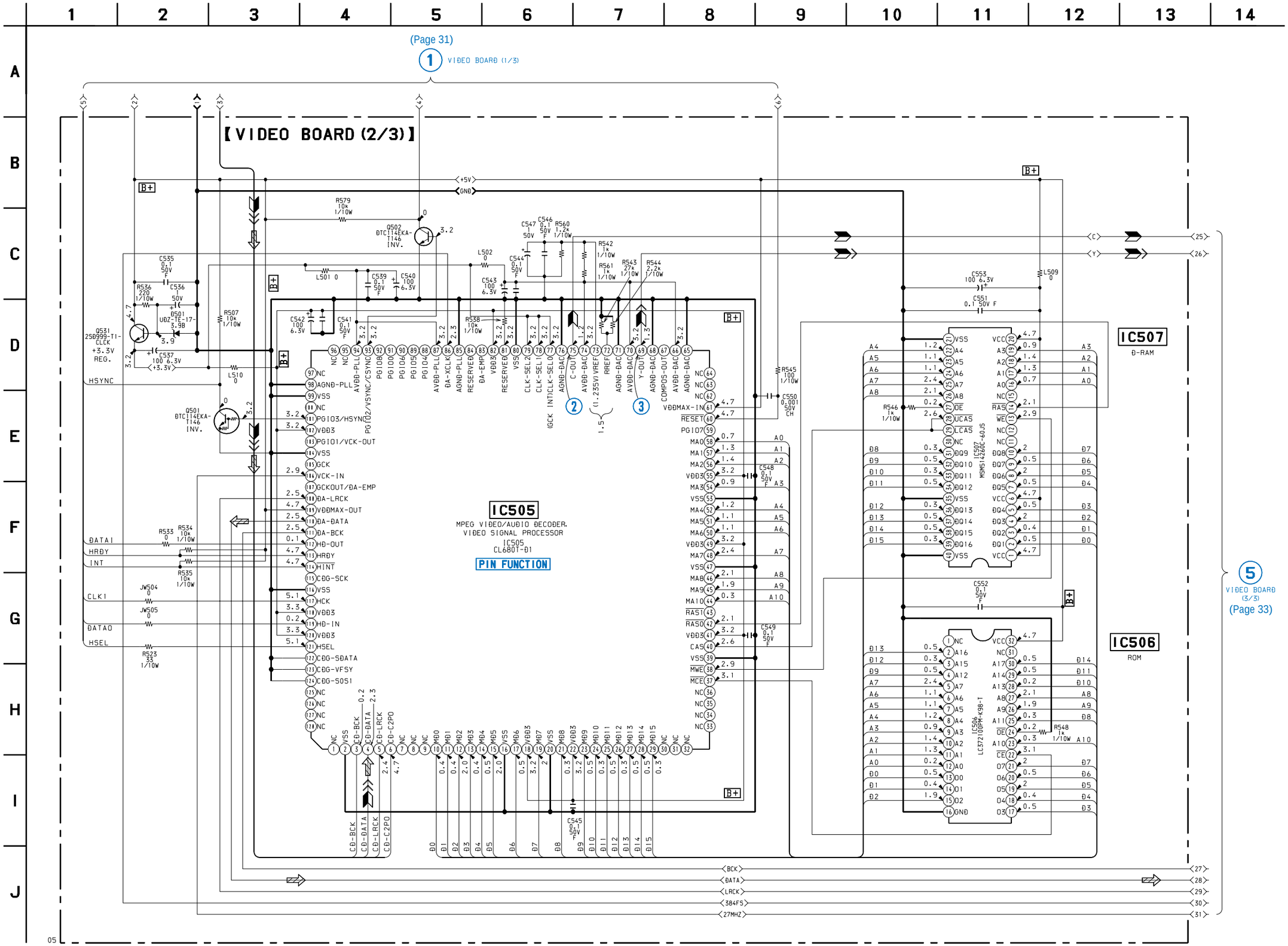
• See page 24 for Waveform.



- Voltages and waveforms are dc with respect to ground in test mode.
  no mark : VIDEO CD COLOR-BARS mode

7-7. SCHEMATIC DIAGRAM – VIDEO (2/3) SECTION –

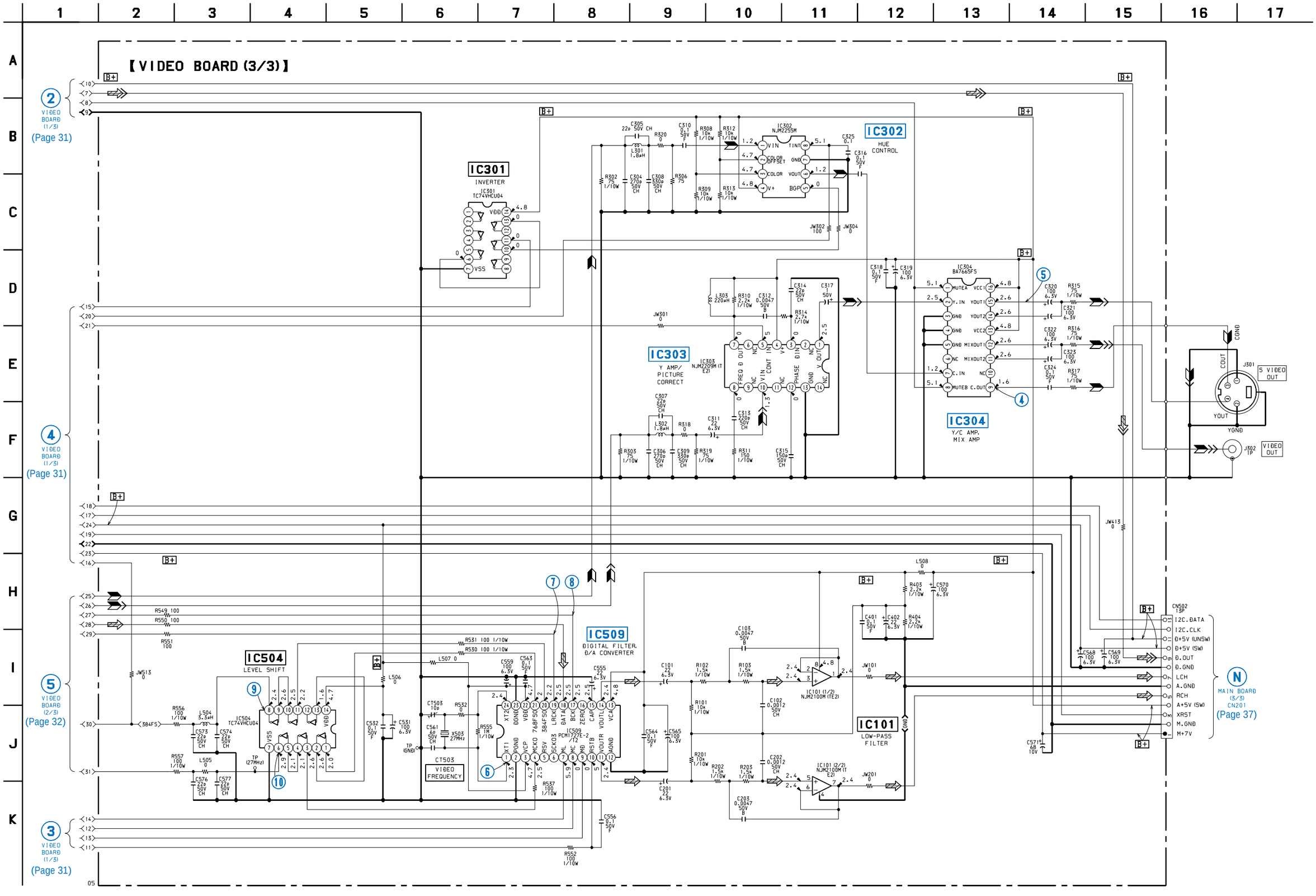
• See page 24 for Waveforms.



• Voltages and waveforms are dc with respect to ground in test mode.
no mark : VIDEO CD COLOR-BARS mode

7-8. SCHEMATIC DIAGRAM – VIDEO (3/3) SECTION –

• See page 24 for Waveforms. • See page 57 for IC Block Diagrams.



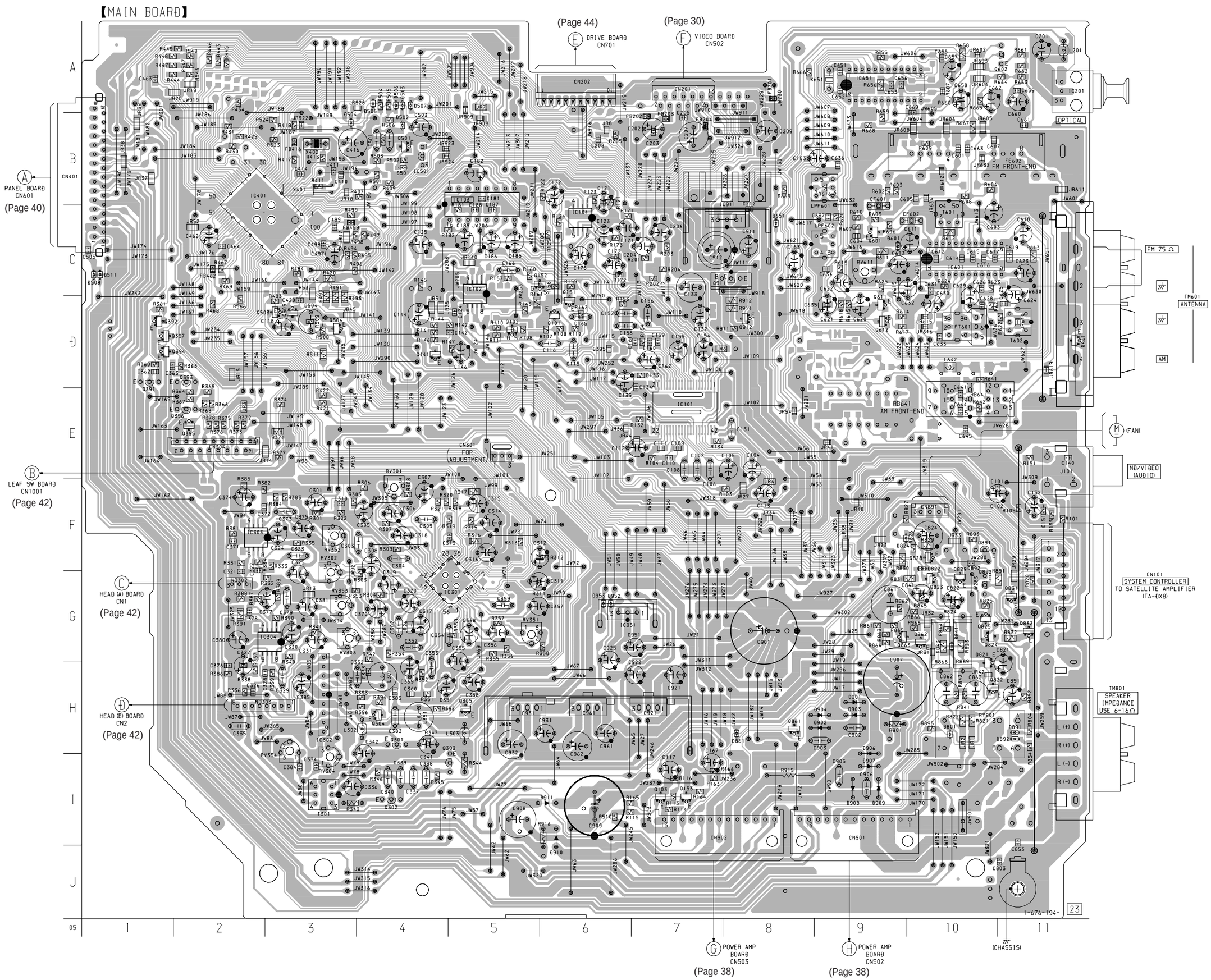
• Voltages and waveforms are dc with respect to ground in test mode.
no mark : VIDEO CD COLOR-BARS mode

HCD-VX88

- **Semiconductor Location**

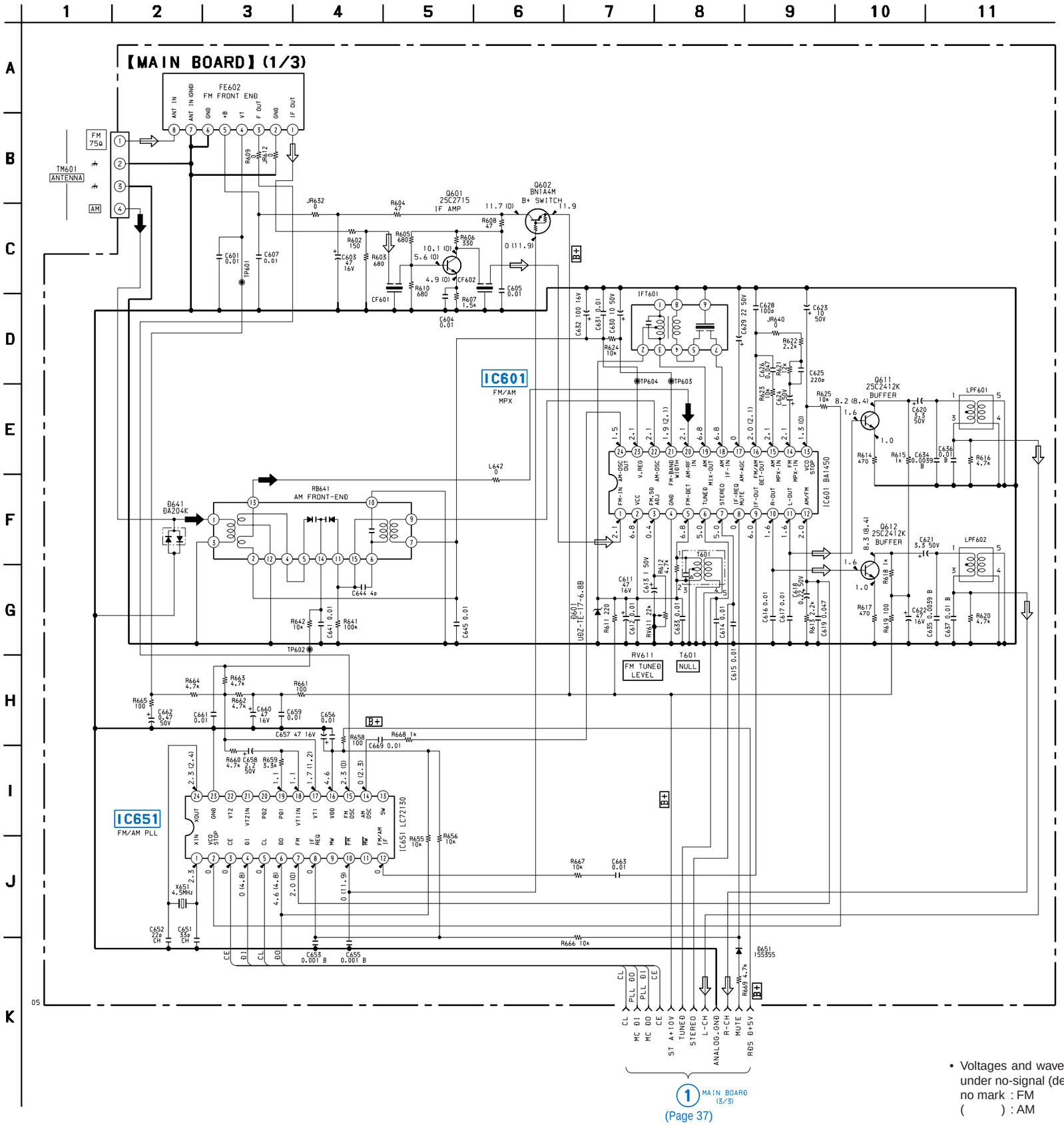
7-9. PRINTED WIRING BOARD – MAIN SECTION – • See page 23 for Circuit Boards Location.

Ref. No.	Location
D501	B-4
D502	B-4
D503	A-4
D504	B-3
D505	A-4
D506	A-4
D507	A-4
D508	C-1
D511	C-1
D601	C-9
D641	D-11
D651	C-8
D801	H-10
D822	F-10
D824	F-9
D841	G-10
D861	H-8
D891	H-11
D892	H-11
D901	H-9
D902	H-9
D903	H-9
D904	H-9
D906	H-9
D907	I-9
D908	I-9
D909	I-9
D910	I-6
D911	I-6
D952	G-6
D953	G-6
IC101	E-7
IC102	C-5
IC103	B-5
IC104	C-6
IC201	A-11
IC301	G-5
IC302	H-3
IC303	F-2
IC304	G-3
IC401	B-2
IC501	B-4
IC601	C-10
IC651	A-9
IC911	C-8
IC921	H-7
IC931	H-5
IC951	G-6
IC961	H-6
Q101	D-6
Q102	D-5
Q103	I-7
Q141	D-4
Q151	D-6
Q152	C-5
Q153	I-7
Q301	H-4
Q302	I-4
Q303	I-5
Q304	H-4
Q305	H-5
Q391	D-1
Q392	D-1
Q393	D-2
Q394	D-1
Q395	E-2
Q396	E-2
Q397	D-1
Q501	B-4
Q503	D-3
Q504	D-3
Q505	D-3
Q601	C-9
Q602	A-11
Q611	D-9
Q612	D-9
Q821	H-10
Q822	H-10
Q823	G-10
Q824	G-10
Q825	G-10
Q828	F-10
Q829	G-10
Q831	G-11
Q832	G-11
Q861	H-8
Q862	G-10
Q863	G-9
Q891	F-10
Q892	G-10
Q911	C-8
Q912	D-8



7-10. SCHEMATIC DIAGRAM – MAIN (1/3) SECTION –

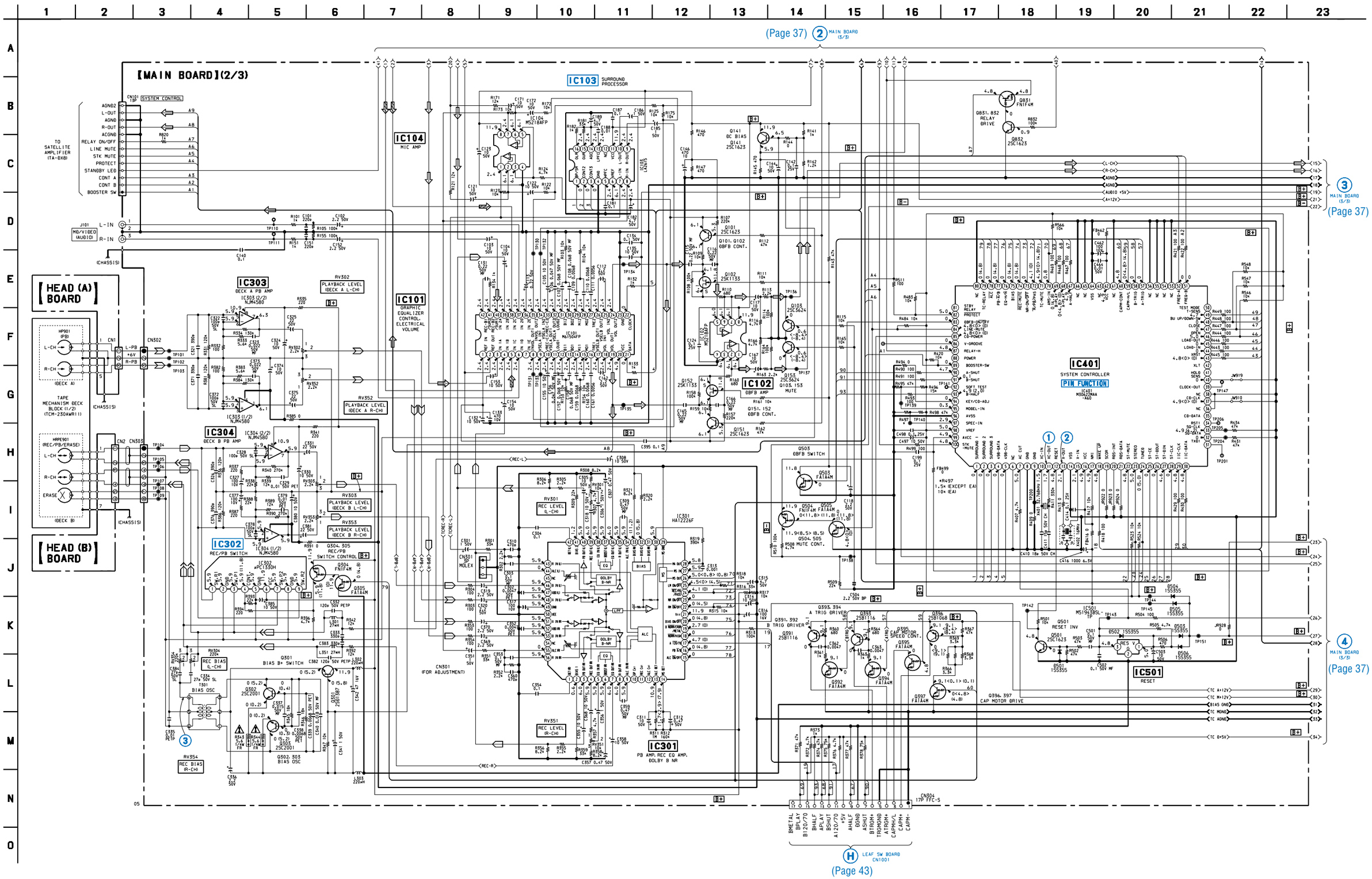
• See page 57 for IC Block Diagrams.



- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM

7-11. SCHEMATIC DIAGRAM – MAIN (2/3) SECTION –

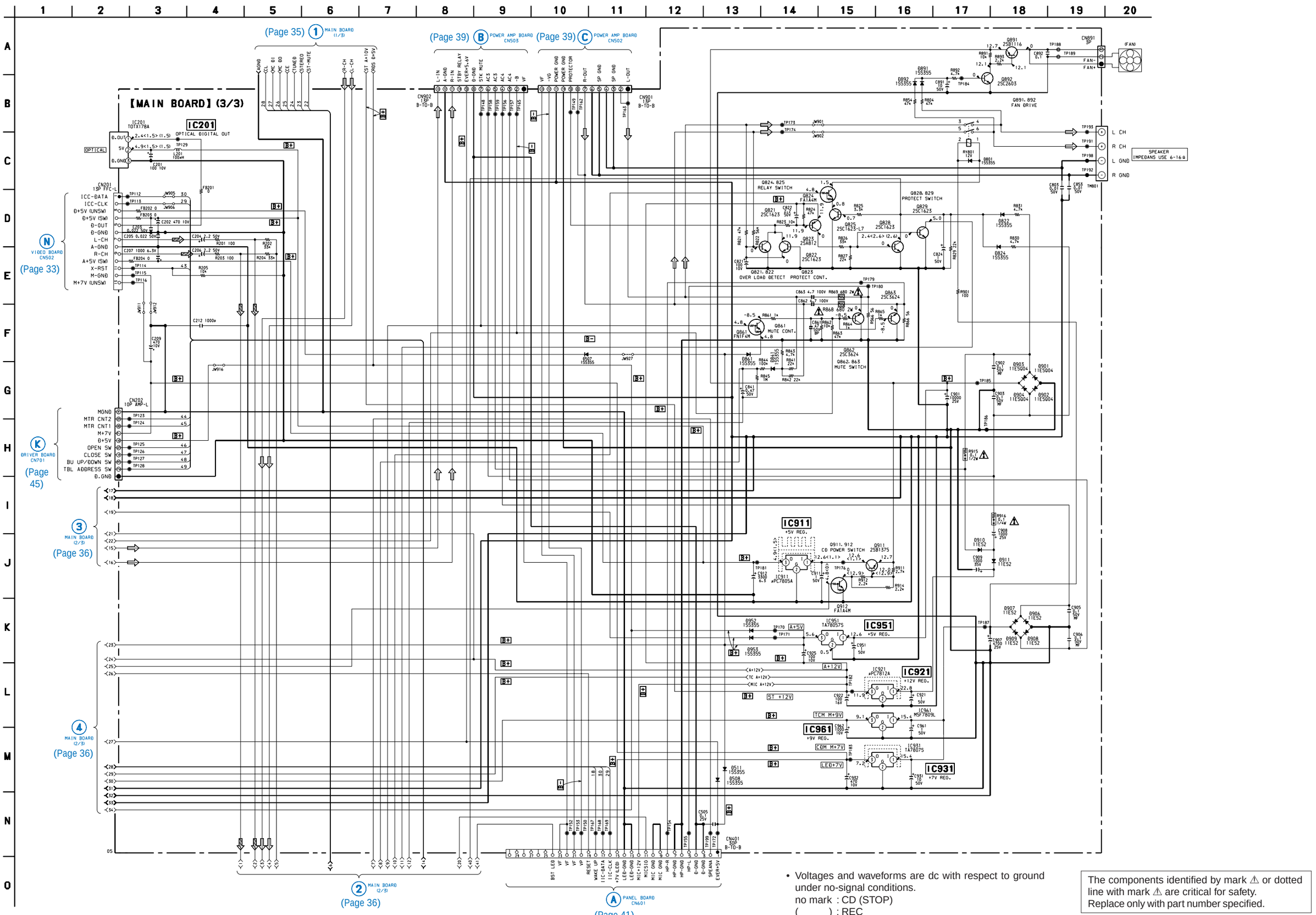
- See page 24 for Waveforms.
- See page 57 for IC Block Diagrams.



- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD (STOP)
  ( ) : REC
  < > : TAPE PB

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-12. SCHEMATIC DIAGRAM – MAIN (3/3) SECTION –



- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD (STOP)
  ( ) : REC
  < > : TAPE PB

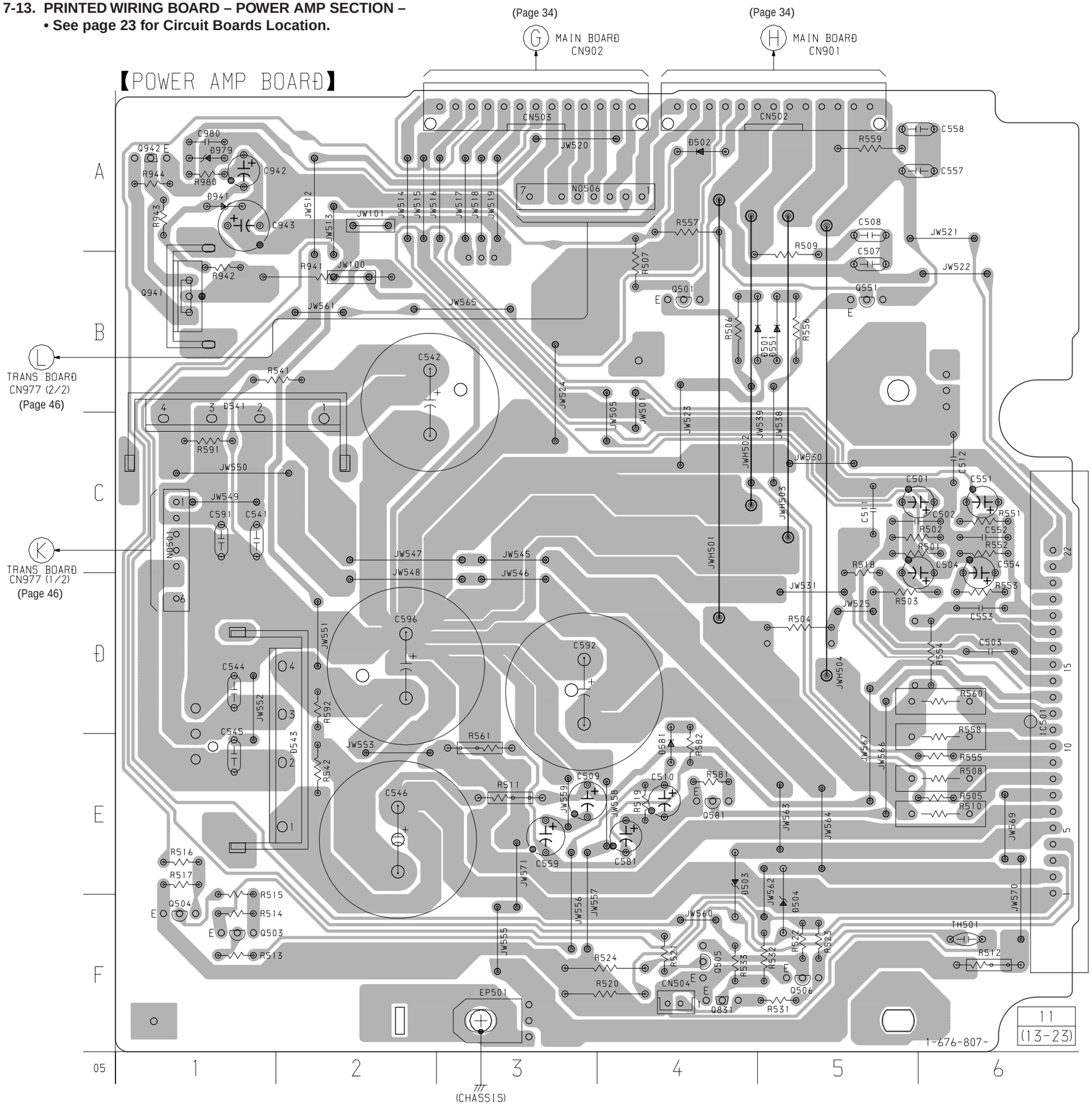
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-13. PRINTED WIRING BOARD – POWER AMP SECTION –

• See page 23 for Circuit Boards Location.

• **Semiconductor Location**

Ref. No.	Location
D501	B-5
D502	A-4
D503	E-4
D504	F-5
D541	C-1
D543	E-2
D551	B-5
D581	E-4
D941	A-1
D979	A-1
IC501	D-6
Q501	B-2
Q503	F-1
Q504	F-1
Q505	F-4
Q506	F-5
Q551	B-5
Q581	E-4
Q941	B-1
Q942	A-1



7-14. SCHEMATIC DIAGRAM – POWER AMP SECTION –

【POWER AMP BOARD】

IC501
POWER AMP

IC501 (1/2)
STK-412-150

IC501 (2/2)
STK-412-150

Q504
MTZJ-T-77-18C

Q503
MTZJ-T-77-18C

Q543
RBV-602

Q541
RBV-602

Q581
2SC1841TP
MUTE SWITCH

Q503, 504
MUTE CONT

Q501, 551
OVER LOAD DETECT

Q505, 506
OVER HEAT DETECT

Q941, 942
-V REG

TH501 10K 1K

EP501

(CHASSIS)

CN503
13P
B-TO-B

CN502
13P
B-TO-B

NO501
6P

NO506
7P

JW940

JW100

TRANS BOARD
CN977 (1/2)
(Page 47)

TRANS BOARD
CN977 (2/2)
(Page 47)

MAIN BOARD
(3/3)
CN902
(Page 37)

MAIN BOARD
(3/3)
CN901
(Page 37)

- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD (STOP)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

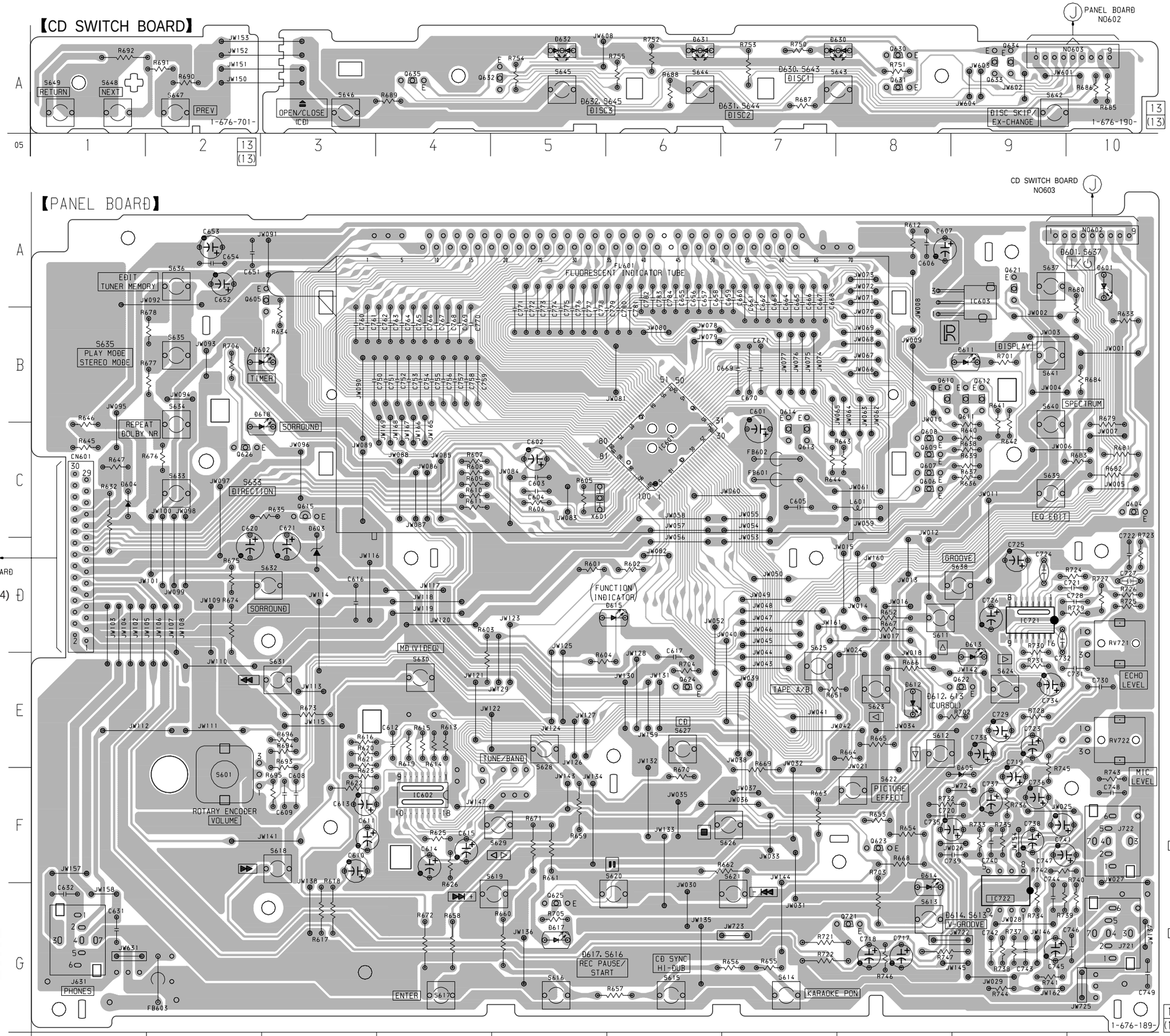
7-15. PRINTED WIRING BOARDS – PANEL SECTION – • See page 23 for Circuit Boards Location.

• Semiconductor Location
– CD SWITCH Board –

Ref. No.	Location
D630	A-8
D631	A-6
D632	A-5
Q630	A-8
Q631	A-8
Q632	A-5
Q633	A-9
Q634	A-9
Q635	A-4

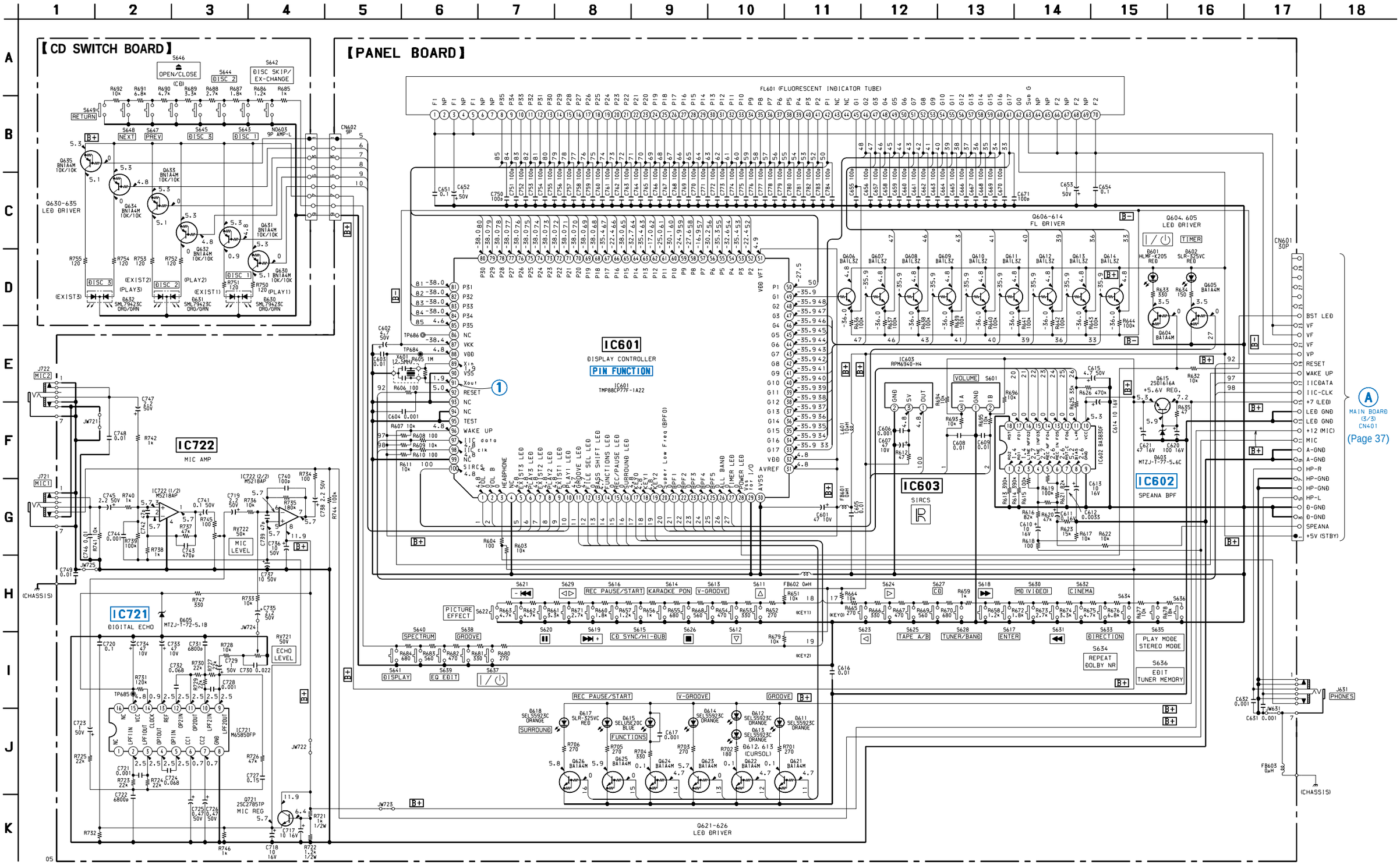
• Semiconductor Location
– PANEL Board –

Ref. No.	Location
D601	A-10
D602	B-2
D603	D-3
D604	C-1
D605	F-9
D611	B-9
D612	E-8
D613	E-9
D614	G-8
D615	D-6
D617	G-5
D618	C-2
IC601	C-6
IC602	F-4
IC603	A-9
IC721	D-9
IC722	G-9
Q604	C-10
Q605	A-3
Q606	C-8
Q607	C-8
Q608	C-8
Q609	C-8
Q610	B-8
Q611	B-9
Q612	B-9
Q613	C-7
Q614	C-7
Q615	C-3
Q621	A-9
Q622	E-9
Q623	F-8
Q624	E-6
Q625	G-5
Q626	C-2
Q721	G-8



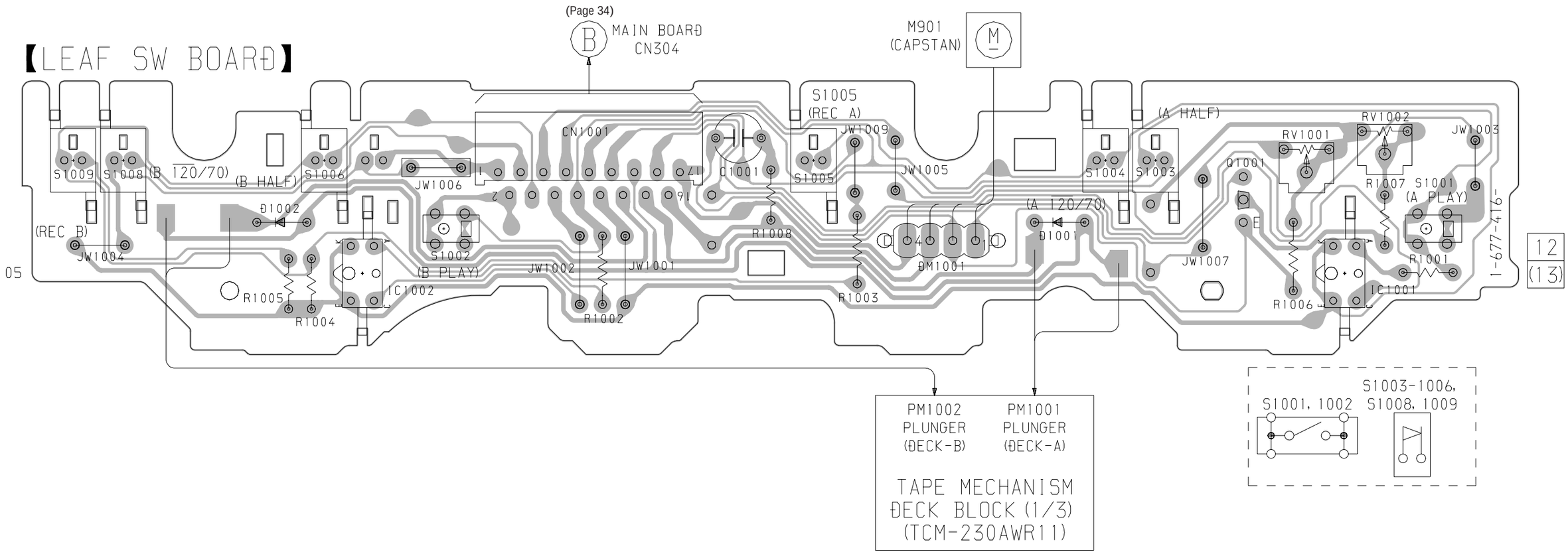
7-16. SCHEMATIC DIAGRAM – PANEL SECTION –

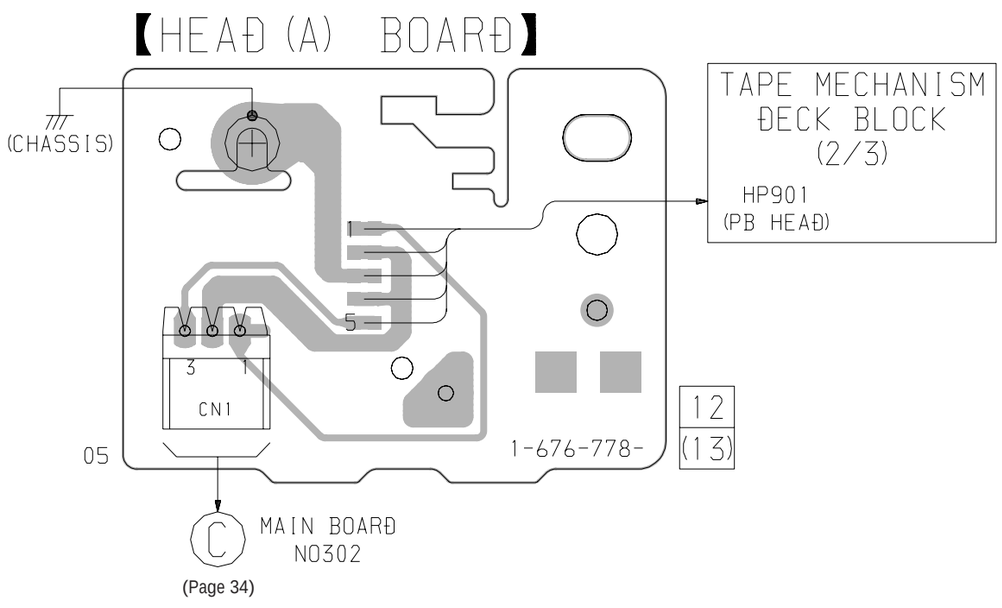
- See page 24 for Waveform.
- See page 57 for IC Block Diagrams.

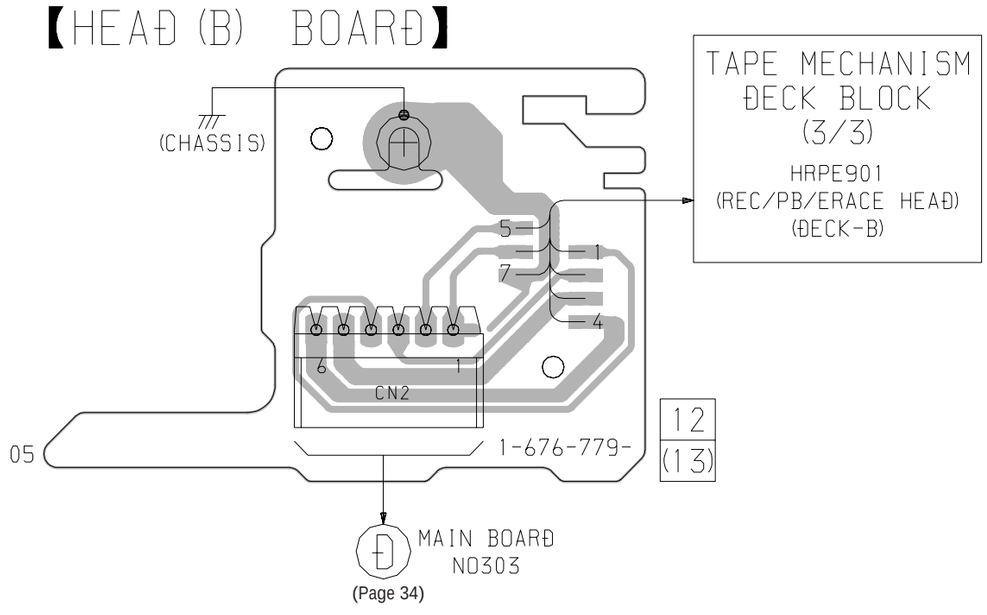


- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD (STOP)

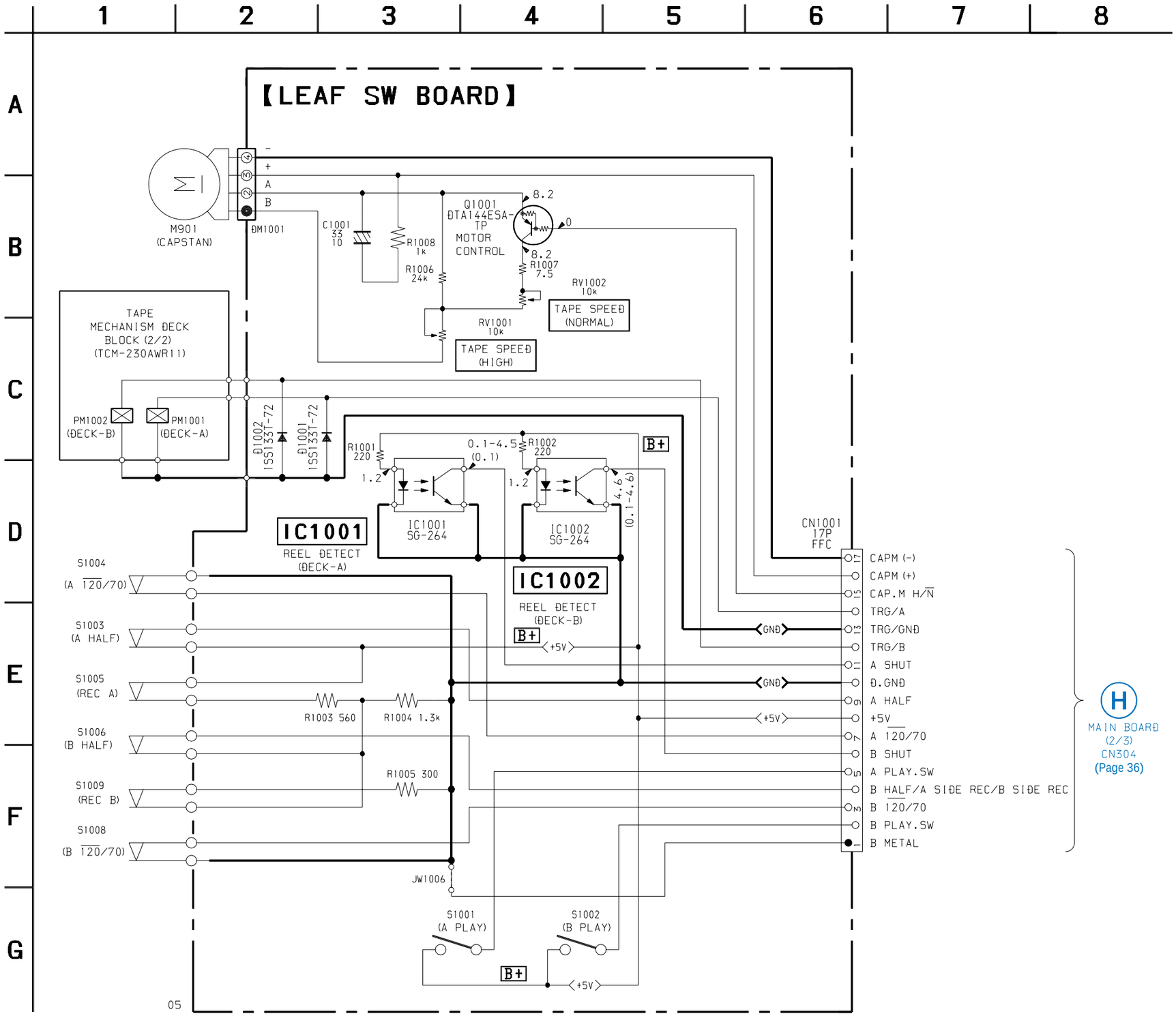
7-17. PRINTED WIRING BOARDS – LEAF SW SECTION – • See page 23 for Circuit Boards Location.







7-18. SCHEMATIC DIAGRAM – LEAF SW SECTION –

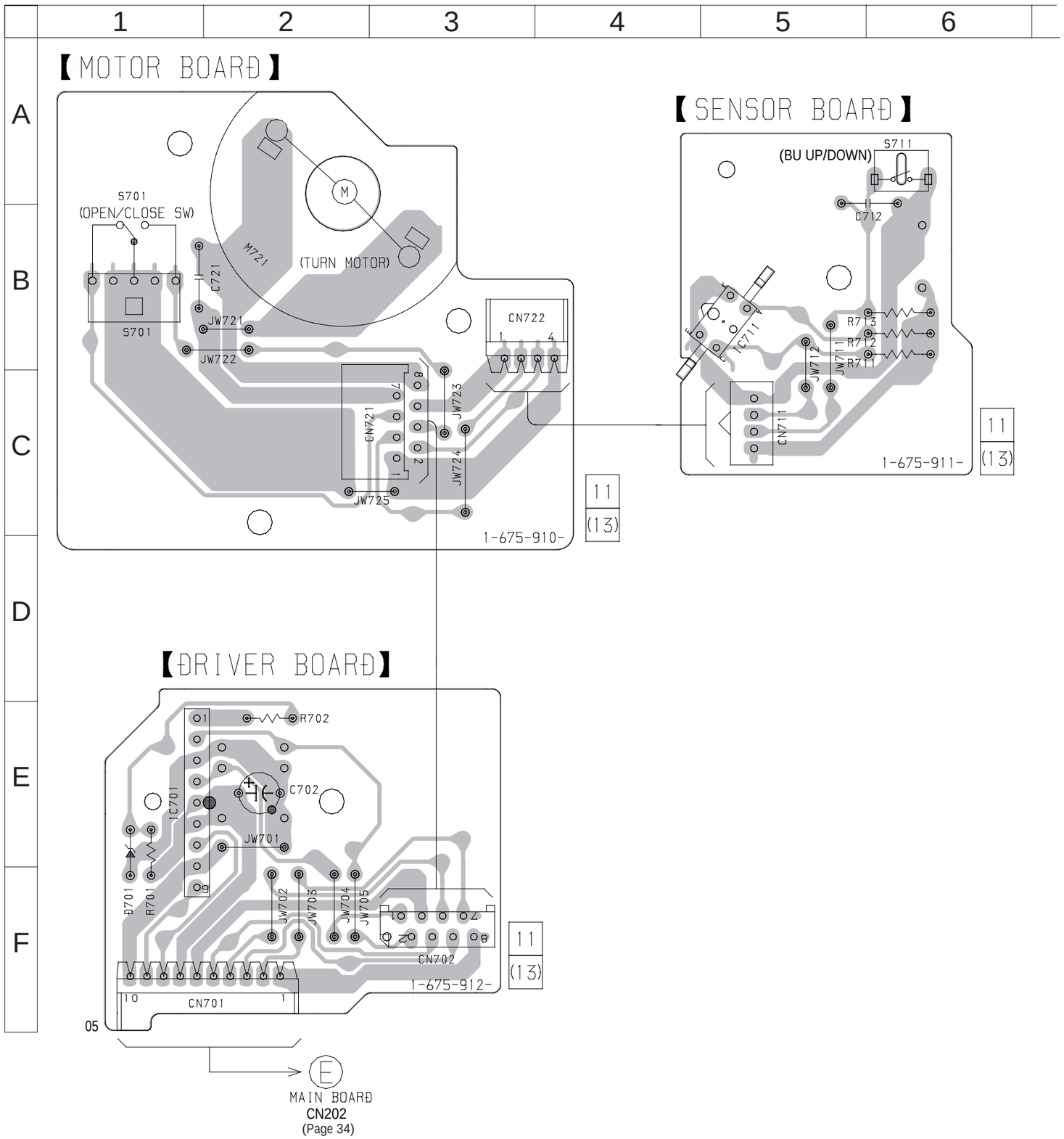


- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB (DECK-A)
  ( ) : PB (DECK-B)

7-19. PRINTED WIRING BOARDS – DRIVER SECTION – • See page 23 for Circuit Boards Location.

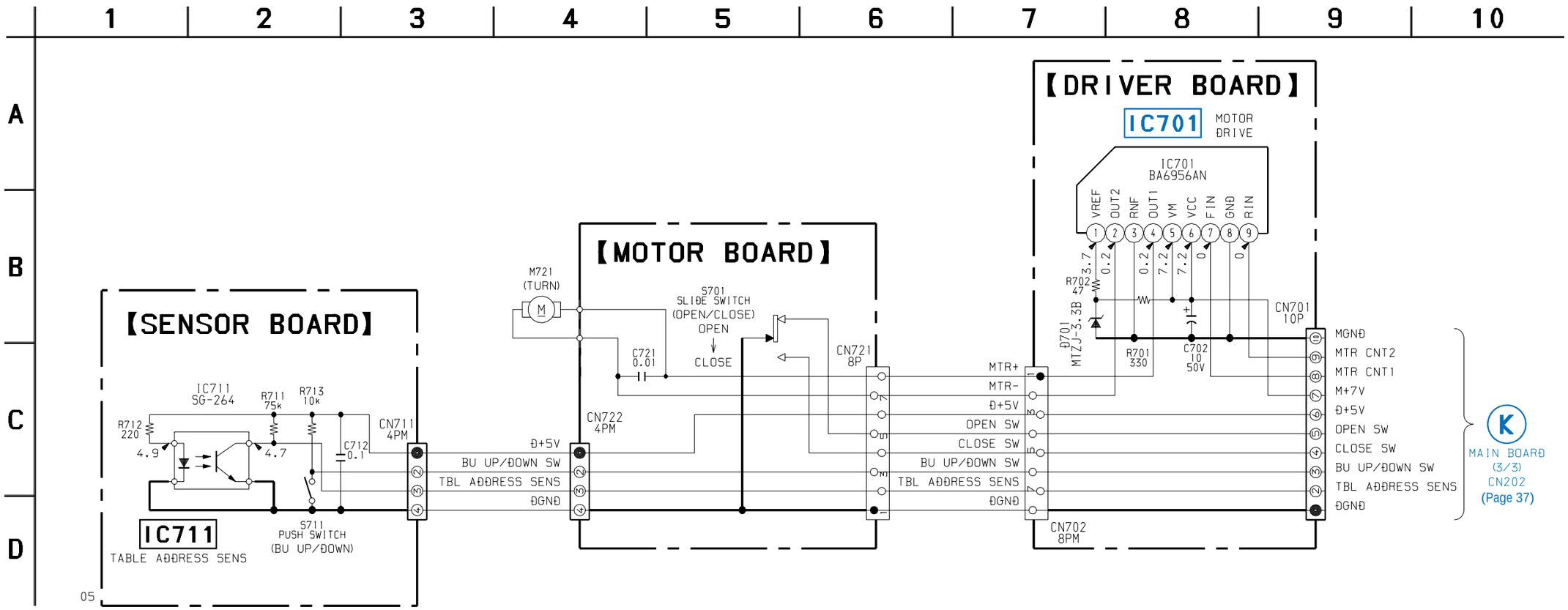
• Semiconductor Location

Ref. No.	Location
D701	E-1
IC701	E-1
IC711	B-5



7-20. SCHEMATIC DIAGRAM – DRIVER SECTION –

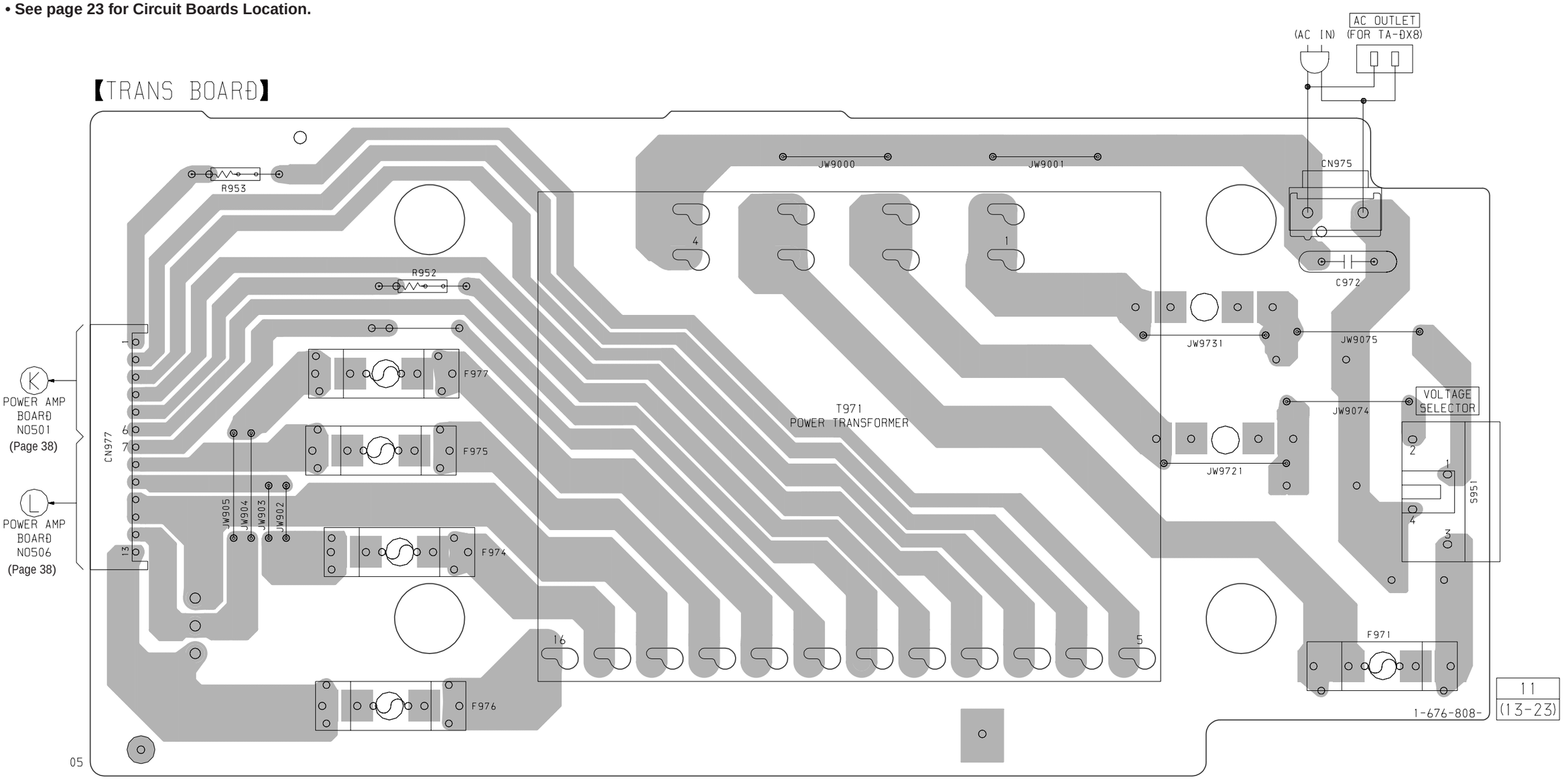
• See page 57 for IC Block Diagram.



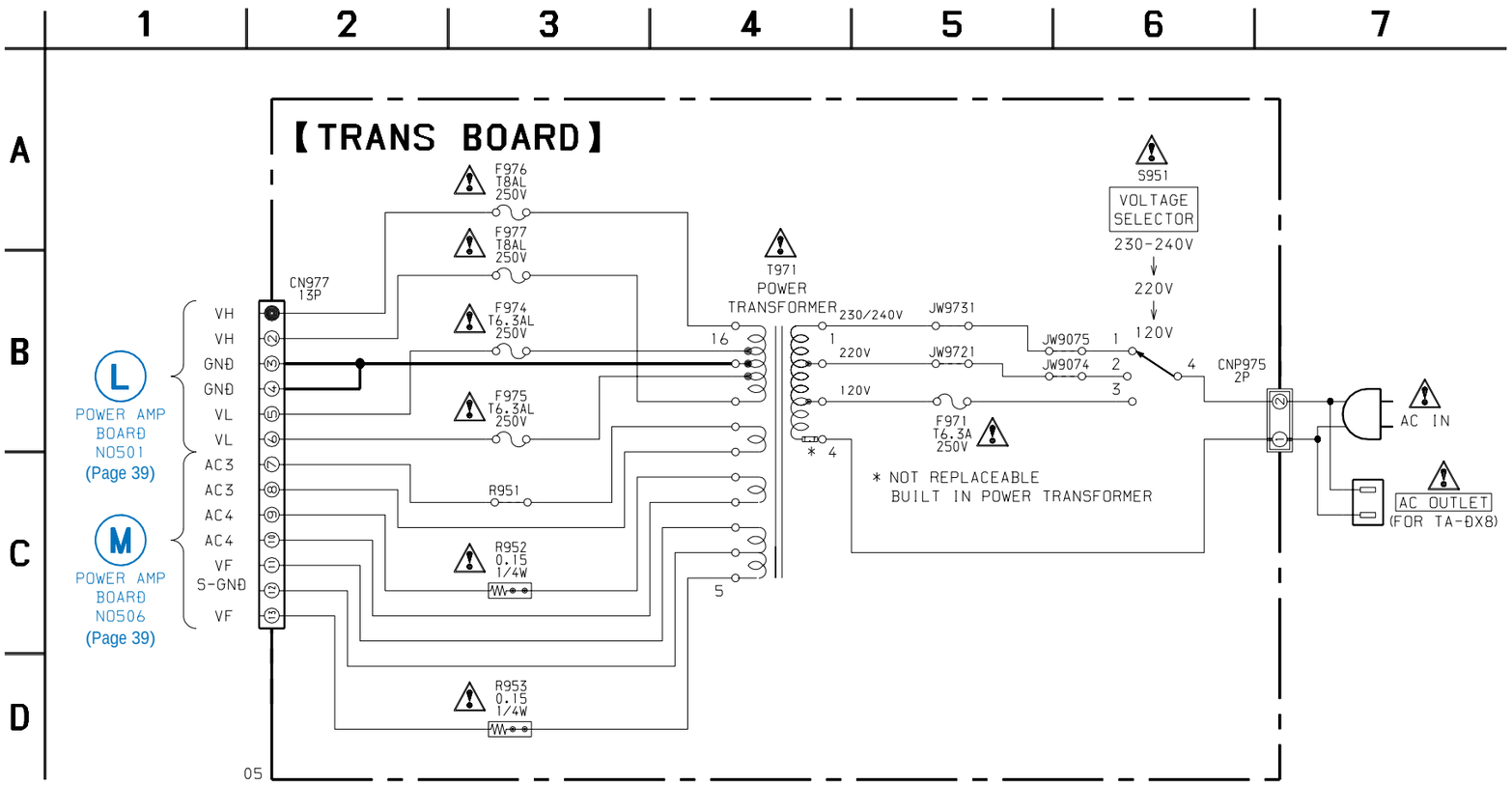
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD (STOP)

7-21. PRINTED WIRING BOARD – TRANS SECTION –

• See page 23 for Circuit Boards Location.



7-22. SCHEMATIC DIAGRAM – TRANS SECTION –



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

7-23. IC PIN FUNCTION DESCRIPTION

• IC101 DIGITAL SERVO, DIGITAL SIGNAL PROCESSOR, D/A CONVERTER (CXD3008Q) (BD Board)

Pin No.	Pin Name	I/O	Description
1	DVDD0	—	+5V power supply (digital)
2	XRST	I	System reset
3	MUTE	I	Muting selection pin
4	DATA	I	Serial data input, supplied from CPU
5	XLAT	I	Latch input, supplied from CPU
6	CLOK	I	Serial data transfer clock input, supplied from CPU
7	SENS	O	SENS output
8	SCLK	I	SENS serial data read-out clock
9	ATSK	I/O	Input pin for anti-shock (Connected to ground)
10	WFCK	O	WFCK (Write Frame Clock) output (Not used)
11	XUGF	O	XUGF output (Not used)
12	XPCK	O	XPCK output (Not used)
13	GFS	O	GFS output (Not used)
14	C2PO	O	C2PO output
15	SCOR	O	Sub-code sync output
16	CM4	O	4.2336MHz output (Not used)
17	WDCK	O	48-bit slot D/A interface word clock (Not used)
18	DVSS	—	Digital ground
19	COUT	O	Numbers of track counted signal output (Not used)
20	MIRR	O	Mirror signal output (Not used)
21	DFCT	O	Defect signal output (Not used)
22	FOK	O	Focus OK output (Not used)
23	PWMI	I	(Not used)
24	LOCK	I/O	GFS in sampled by 460Hz (Not used)
25	MDP	O	Output to control spindle motor servo
26	SSTP	I	Detection signal input from limit switch
27	FSTO	O	2/3 divider output (Not used)
28	DVDD1	—	Digital power supply
29	SFDR	O	Sled motor drive output
30	SRDR	O	
31	TFDR	O	Tracking coil drive output
32	TRDR	O	
33	FFDR	O	Focus coil drive output
34	FRDR	O	
35	DVSS1	—	Digital ground
36	TEST	I	TEST pin connected normally ground
37	TES1	I	
38	VC	I	Center voltage input
39	FE	I	FOCUS error signal input
40	SE	I	Sled error signal input

Pin No.	Pin Name	I/O	Description
41	TE	I	Tracking error signal input
42	CE	I	Center servo analog input
43	RFDC	I	RF signal input
44	ADIO	O	Test pin (Not used)
45	AVSS0	—	Analog ground
46	IGEN	I	Power supply pin operational amplifiers
47	AVDD0	—	+5V power supply (analog)
48	ASYO	O	EFM full swing output
49	ASYI	I	Asymmetry comparate voltage input
50	RFAC	I	EFM RF signal input
51	AVSS1	—	Analog ground
52	CLTV	I	Control voltage input for master VCO
53	FILO	O	Filter output for master PLL
54	FILI	I	Filter input for master PLL
55	PCO	O	Charge-pump output for master PLL
56	AVDD1	—	+5V power supply (analog)
57	BIAS	I	Asymmetry circuit constant current input
58	VCTL	I	Control voltage input for variable pitch PLL
59	V16M	I/O	16.9344MHz output (Not used)
60	VPCO	O	Charge-pump output for variable pitch PLL (Not used)
61	DVDD2	—	+5V power supply (digital)
62	ASYE	I	Asymmetry circuit ON/OFF (Connected to +5V.)
63	MD2	I	Digital-out ON/OFF control (Connected to +5V.)
64	DOUT	O	Digital-out output
65	LRCK	O	48-bit slot D/A interface, LR clock output
66	PCMD	O	48-bit slot D/A interface, Serial deta output
67	BCLK	O	48-bit slot D/A interface, bit clock output
68	EMPH	O	Playback disc output in emphasis mode (Not used)
69	XTSL	I	X’tal selection input pin
70	DVSS2	—	Digital ground
71	XTAI	I	X’tal oscillator circuit input
72	XTAO	O	X’tal oscillator circuit output (Not used)
73	SOUT	O	(Not used)
74	SOCK	O	
75	XOLT	O	
76	SQSO	O	Sub-Q serial output
77	SQCK	I	Clock input for SQSO read-out
78	SCSY	I	Sub-code input (Connected to ground)
79	SBSO	O	Sub-P through Sub-W serial output (Not used)
80	EXCK	I	Clock input for SBSO read-out (Connected to ground)

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• IC502 CD, MECHANISM CONTROLLER (M30620MCA-A34FP) (VIDEO Board (1/3))

Pin No.	Pin Name	I/O	Description
1	SENSE	I	Internal state (SENSE) monitor input (IC101)
2	SENSE CLK	O	Serial data reading clock output (IC101)
3	RESOLUTION	O	Serial data output (IC101)
4	CROMA LEVEL	O	Lach output (IC101)
5	DSP CLK	O	Serial data clock output (IC101)
6	TSENS	I	Not used
7	REMOTE IN	I	Not used
8	BYTE	I	External bus width change input (Connected to ground)
9	CNVSS	–	Ground
10	DSP MUTE	O	Mute output (IC101) “H” : mute
11	CTRL1 (L : DOUBLE)	O	Double change output (IC101) “L” : double
12	XRESET	I	System reset input “L” : reset
13	XOUT	O	Main clock output (10MHz)
14	VSS	–	Ground
15	XIN	I	Main clock input (10MHz)
16	VCC	–	+5V power supply
17	NMI	I	Requests mask disable interruption input (Connected to +5V)
18	SCOR	I	Subcode sync input (IC101)
19	D SENS	I	Not used
20	CL680 INT	I	Video CD interruption input (IC505)
21	CL680 HSEL	O	Video CD select data of the host MPU (IC505)
22	DF LATCH	O	Digital filter latch output (IC509)
23	CL680 HRDY	I	Ready signal input for communication to the host MPU (IC505)
24	680 RESET	O	Video CD reset output (IC505) “L” : reset
25	H. SYNC IN	I	H. sync signal input
26	BGP	O	BGP output
27	LPH	O	Double control output (IC101) “H” : double
28	LD ON	O	Laser diode ON/OFF output
29	IIC-CLK	I/O	IIC clock input from master control
30	IIC-DATA	I/O	IIC data input from master control
31	DATA1O	O	Serial 1 data output (IC505, 509)
32	DATA1I	I	Serial 1 data input (IC505, 509)
33	CLK1	O	Serial 1 clock output
34	RTS1	O	Not used
35	XVLEVEL. DOWN	O	Fix the video signal output level output (Not used)
36	SUBQ DATA	I	Serial 2 data input for subcode sync reading
37	SUBQ CLK	I	Serial 2 clock input for subcode sync reading
38	P. ON	I	Not used
39	BUS XRDY	I	Not used
40	BUS	I	Not used
41	BUS XHOLD	I	Not used
42, 43	BUS	I	Not used
44	OSD LANGUAGE	I	Model selection input “L” : chinese model, “H” : except chinese model
45	V. SYNC	I	V sync signal input

Pin No.	Pin Name	I/O	Description
46	BUS XWRL	I	Not used
47	LO. BOOST	I	Not used
48	AUDIO MUTE	O	Audio mute output “L” : mute (Not used)
49	LOAD OUT	I	Not used
50	LOAD IN	I	Not used
51	INSW	I	Not used
52	OUTSW	I	Not used
53	MODEL 1	I	L : System input (Fixed at “L”)
54	MODEL 2	I	L : System input (Fixed at “L”)
55	TBLL	I	Not used
56	TBLR	I	Not used
57	ENC 1	I	Not used
58	ENC 2	I	Not used
59	ENC 3	I	Not used
60	—	I	Not used
61	—	I	Not used
62	VCC	–	+5V power supply
63	—	I	Not used
64	VSS	–	Ground
65	V. MUTE	O	Video mute output “L”
66 to 72	A6 to A0	I	Not used
73	TEST LED	O	TEST LED for MPEG decoder
74	TEST 1	I	Test mode for Video CD check
75	TEST 2	I	Test mode for servo check
76	TEST 3	I	Not used
77	DEVICE RESET	O	Device system rest output “L” : reset
78	STANDBY	I	Not used
79	FL CS	I	Not used
80	FL	I	Not used
81 to 88	D7 to D0	I	Not used
89	MIC CTRL	I	Not used
90	KEY 1	I	Not used
91	KEY 2	I	Not used
92	KEY 3	I	Not used
93	NY/PAL	I	NTSC/PAL select switch input (Open)
94	MUSIC VOL	I	Not used
95	DSP DATA	O	Serial data output (IC101)
96	AVSS	–	A/D converter ground
97	DSP LATCH	O	Serial data latch output (IC101)
98	VREF	I	A/D converter reference voltage input (Connected to +5V)
99	AVCC	–	A/D converter +5V power supply
100	AMP. ON	I	Not used

• IC505 MPEG VIDEO/AUDIO DECODER, VIDEO SIGNAL PROCESSOR (CL680T-D1) (VIDEO Board (2/3))

Pin No.	Pin Name	I/O	Description
1	NC	–	Not used
2	VSS	–	Ground
3	CD-BCK	I	CD Decode bit clock
4	CD-DATA	I	CD Decode data
5	CD-LRCK	I	CD Decode Left or Right channel selection clock
6	CD-C2PO	I	CD Decode C2 error data
7	NC	–	Not used
8	NC	–	Not used
9	NC	–	Not used
10	MD0	I/O	Data bus between Microcode ROM/D-RAM and CL680
11	MD1	I/O	Data bus between Microcode ROM/D-RAM and CL680
12	MD2	I/O	Data bus between Microcode ROM/D-RAM and CL680
13	MD3	I/O	Data bus between Microcode ROM/D-RAM and CL680
14	MD4	I/O	Data bus between Microcode ROM/D-RAM and CL680
15	MD5	I/O	Data bus between Microcode ROM/D-RAM and CL680
16	VSS	–	Ground
17	MD6	I/O	Data bus between Microcode ROM/D-RAM and CL680
18	VDD3	–	+3.3V Power supply
19	MD7	I/O	Data bus between Microcode ROM/D-RAM and CL680
20	VSS	–	Ground
21	MD8	I/O	Data bus between Microcode ROM/D-RAM and CL680
22	VDD3	–	+3.3V Power supply
23	MD9	I/O	Data bus between Microcode ROM/D-RAM and CL680
24	MD10	I/O	Data bus between Microcode ROM/D-RAM and CL680
25	MD11	I/O	Data bus between Microcode ROM/D-RAM and CL680
26	MD12	I/O	Data bus between Microcode ROM/D-RAM and CL680
27	MD13	I/O	Data bus between Microcode ROM/D-RAM and CL680
28	MD14	I/O	Data bus between Microcode ROM/D-RAM and CL680
29	MD15	I/O	Data bus between Microcode ROM/D-RAM and CL680
30	NC	–	Not used
31	NC	–	Not used
32	NC	–	Not used
33	NC	–	Not used
34	NC	–	Not used
35	NC	–	Not used
36	NC	–	Not used
37	$\overline{\text{MCE}}$	O	Chip enable signal to Microcode ROM
38	$\overline{\text{MWE}}$	O	Write enable signal to D-RAM
39	VSS	–	Ground
40	CAS	O	Column address strove : Latch the column address to D-RAM
41	VDD3	–	+3.3V power supply
42	$\overline{\text{RAS0}}$	O	Row address strove : Latch row address to D-RAM
43	$\overline{\text{RAS1}}$	–	Not used
44	MA10	O	Address data from CL680 to Microcode ROM
45	MA9	O	Address data from CL680 to Microcode ROM

Pin No.	Pin Name	I/O	Description
46	MA8	O	Address data from CL680 to Microcode ROM/D-RAM
47	VSS	–	Ground
48	MA7	O	Address data from CL680 to Microcode ROM/D-RAM
49	VDD3	–	+3.3V Power supply
50	MA6	O	Address data from CL680 to Microcode ROM/D-RAM
51	MA5	O	Address data from CL680 to Microcode ROM/D-RAM
52	MA4	O	Address data from CL680 to Microcode ROM/D-RAM
53	VSS	–	Ground
54	MA3	O	Address data from CL680 to Microcode ROM/D-RAM
55	VDD3	–	+3.3V Power supply
56	MA2	O	Address data from CL680 to Microcode ROM/D-RAM
57	MA1	O	Address data from CL680 to Microcode ROM/D-RAM
58	MA0	O	Address data from CL680 to Microcode ROM/D-RAM
59	PGIO7	I/O	Not used
60	$\overline{\text{RESET}}$	I	Reset signal input from the host MPU
61	VDDMAX-IN	I	Fix the maxium input voltage each input pin and I/O pin
62	NC	–	Not used
63	NC	–	Not used
64	NC	–	Not used
65	AGND DAC	–	Ground
66	AVDD DAC	–	+3.3V Power supply
67	COMPOS OUT	O	Not used
68	AGND DAC	–	Ground
69	Y-OUT	O	Luminance signal out
70	AVDD DAC	–	+3.3V Power supply
71	AGND DAC	–	Ground
72	RREF	I	Fix the video signal output level
73	(1.235V) VREF	O	Reference voltage (+1.235V)
74	AVDD DAC	–	+3.3V Power supply
75	C-OUT	O	Chrominance signal out
76	AGND DAC	–	Ground
77	(GCK INT) CLK SEL	I	GCK selection “H”; Internal, “L”; External
78	CLK SEL	I	DA-XCK selection (1)
79	CLK SEL	I	DA-XCK selection (2)
80	VSS	–	Ground
81	RESERVED	I	Selection the operation clock 42.336MHz
82	VDD3	–	+3.3V Power supply
83	DA-EMP	–	Not used
84	RESERVED	–	Not used
85	AGND PLL	–	Ground
86	DA-XCLK	I	Main reference clock input (16.9344MHz=384fs)
87	AVDD PLL	–	+3.3V
88	PGIO4	I/O	Not used
89	PGIO5	I/O	Not used
90	PGIO6	I/O	Not used

Pin No.	Pin Name	I/O	Description
91	PGIO0	I/O	Not used
92	PGIO8	I/O	Not used
93	PGIO2/VSYNC/CSYNC	O	Vertical synchronized signal of video signal
94	AVDD PLL	–	+3.3V Power supply
95	NC	–	Not used
96	NC	–	Not used
97	NC	–	Not used
98	AGND PLL	–	Ground
99	VSS	–	Ground
100	NC	–	Not used
101	PGIO3/HSYNC	O	H. sync signal output
102	VDD3	–	+3.3V Power supply
103	PGIO1/VCK-OUT	I/O	Not used
104	VSS	–	Ground
105	GCK	I	Not used
106	VCK-IN	I	Main clock for video signal processer
107	GCKOUT/DA-EMP	O	Not used
108	DA-LRCK	O	Digital Audio Left or Right channel selection clock
109	VDDMAX-OUT	O	Fix the maxium output voltage certain output pins (Connected to +5V)
110	DA-DATA	O	Digital Audio data
111	DA-BCK	O	Digital Audio bit clock
112	HD-OUT	O	Serial Data output from CL680 to the host MPU
113	HRDY	O	Ready signal CL680 is ready for communication to the host MPU
114	$\overline{\text{HINT}}$	O	Request signal for interrupting the host MPU
115	CDG-SCK	I/O	Not used
116	VSS	–	Ground
117	HCK	I	Host clock : referance signal for the host bus interface
118	VDD3	–	+3.3V Power supply
119	HD-IN	I	Serial Data output ftom the host MPU to CL680
120	VDD3	–	+3.3V Power supply
121	HSEL	I	Select data or address of the host MPU
122	CDG-SDATA	I	Ground
123	CDG-VFSY	I	Ground
124	CDG-SOS1	I	Ground
125	NC	–	Not used
126	NC	–	Not used
127	NC	–	Not used
128	NC	–	Not used

• IC401 SYSTEM CONTROLLER (M30622MAA-A60) (MAIN BOARD)

Pin No.	Pin Name	I/O	Description
1	SURROUND 1	O	Surround control signal output
2	SURROUND 2	O	Surround control signal output
3	SURROUND 3	O	Surround control signal output
4	498-DATA	O	Data signal output for IC101 (M61504FP)
5	498-CLK	O	Clock signal output for IC101 (M61504FP)
6	N.C	I	Not used.
7	AC-CUT	I	AC CUT ON (L) / OFF (H) CHECK
8	GND	—	Connected to ground.
9	GND	—	Connected to ground.
10	XC IN	I	SUB CLOCK input. (32.768kHz)
11	XC OUT	O	SUB CLOCK output. (32.768kHz)
12	RESET	I	System reset input.
13	X-OUT	O	MAIN SYSTEM CLOCK output. (16MHz)
14	VSS	—	Connected to ground.
15	X-IN	I	MAIN SYSTEM CLOCK input. (16MHz)
16	VCC	—	Power supply. (+5V)
17	NMI	I	PULL UP (EVER +5V)
18	$\overline{\text{WAKE\_UP}}$	I	WAKE UP signal input. (L)
19	SCOR	I	CD Q-data request signal input. (Connected to ground)
20	RDS-INT	I	RDS interrupt signal input. (Connected to ground)
21	RDS-DATA	I	RDS data signal input. (Connected to ground)
22	ST-MUTE	O	Tuner mute signal output.
23	STEREO	I	STEREO detect signal input. L=ON, H=OF
24	TUNED	I	TUNED detect signal input. L=ON, H=OFF
25	ST-CE	O	TUNER chip eneble output.
26	ST-DOUT	O	TUNER data output.
27	ST-DIN	I	TUNER data input.
28	ST-CLK	O	TUNER clock signal output.
29	IIC_CLK	O	IIC SCL output.
30	IIC_DATA	O	IIC SDA output.
31	TXDI	—	Not used.
32	SQ-DATA	I	Subcode Q data input. (CD data) (Connected to ground)
33	SQ-CLK	I	Subcode Q data input. (CD clock) (Connected to ground)
34	RST1	I	Not used.
35	CD-DATA	I	CD data input. (Not used)
36	N.C	I	Not used.
37	CD-CLK	I	CD clock input. (Connected to ground)
38	N.C	I	Not used.
39	CLOCK-OUT	O	Clock check signal output. (Not used)
40	SENS	I	BD condition signal input. (Connected to ground)
41	HOLD	O	MODE signal input. (Not used)
42	XLT	O	CD latch signal output. (Not used)
43	XRST	O	CD reset signal output.
44	LOAD-IN	I	Loading motor control signal input.
45	LOAD-OUT	O	Loading motor control signal output.
46	OPEN	I	Tray open detect signal input.
47	CLOSE	I	Tray close detect signal input.
48	UP/DOWN SW	I	Pick-up up/down detect signal input.
49	T-SENS	I	CD table detect signal input.
50	TEST MODE	I	Not used.

Pin No.	Pin Name	I/O	Description
51	FREQ-B	I	Sound control signal to the satellite amplifier (TA-DX8).
52	FREQ-A	I	Sound control signal to the satellite amplifier (TA-DX8).
53	N.C	I	Not used.
54	N.C	I	Not used.
55	N.C	I	Not used.
56	N.C	I	Not used.
57	A TRIG	O	A deck trigger control signal output.H=ON, L-OFF
58	B TRIG	O	B deck trigger control signal output.H=ON, L-OFF
59	CAPM-H/L	O	Capstan motor High/Low speed control signal output.
60	CAPM-CONT	O	Capstan motor REV/FWD/STOP control signal output.H=REV, L=FWD/STOP
61	N.C	I	Not used.
62	VCC	—	POWER SUPPLY (+5V)
63	N.C	I	Not used.
64	VSS	—	Ground.
65	N.C	I	Not used.
66	N.C	I	Not used.
67	A HALF	I	A deck half detect signal input.
68	A PLAY	I	A deck play detect signal input.
69	B PLAY	I	B deck play detect signal input.
70	AMS-IN	I	AMS signal input. L=ON,H=OFF
71	TC-MUTE	O	Tape deck line mute ON/OFF signal output. H=ON, L=OFF
72	$\overline{R}$/PB/PAS	I	REC/PB/PASS select signal input.
73	NR-ON/$\overline{OFF}$	O	DOLBY NR ON/OFF signal output. H=ON, L=OFF
74	$\overline{REC\text{-}MUTE}$	O	REC mute ON/OFF signal output. L=ON, H=OFF
75	BAIS	O	BIAS ON/OFF signal output.H=ON, L=OFF
76	EQ-H/$\overline{N}$	O	EQ High/Normal select signal output. H=High, L=Normal
77	PB-$\overline{A}$/B	O	Playback deckA/B select signal output. H=deckB, L=deckA
78	$\overline{ALC}$	O	ALC ON/OFF signal output. L=ON, H=OFF
79	TC-RELAY	O	Tape deck relay ON/OFF signal output. H=ON, L=OFF
80	N.C	I	Not used.
81	STBY-RELAY	O	STANDBY relay control signal output. (Not used)
82	$\overline{PROTECT}$	I	Speaker protect signal input. L=ON, H=OFF
83	DBFB-ON/$\overline{OFF}$	O	DBFD control signal output. H=ON, L=OFF
84	LINE-MUTE	O	Line mute signal output. L=ON, H=OFF
85	CD-POWER	O	CD-POWER ON/OFF signal output. H=ON, L=OFF
86	F-SHIFT	O	Not used.
87	RELAY-H	O	Speaker terminal relay control signal output. H=ON, L=OFF
88	POWER	O	POWER ON/OFF signal output. H=ON, L=OFF
89	BOOSTER SW	I	Booster switch input from the satellite amplifier (TA-DX8).
90	A SHUT	I	A deck reel pulse detect signal input.
91	B SHUT	I	B deck reel pulse detect signal input.
92	SOFT-TEST	O	Not used.
93	B HALF	I	B deck half detect signal input.
94	KEY/CD ADJ	O	KEY (for jig) / CD adjust.
95	MODEL-IN	I	Model select signal input.
96	AVSS	—	Analog ground.
97	SPEC-IN	I	Version select signal input.
98	VREF	—	Analog Reference Voltage
99	AVCC	—	Analog Power Supply
100	STK-MUTE	O	Power amplifier mute ON/OFF signal output. H=ON, L=OFF

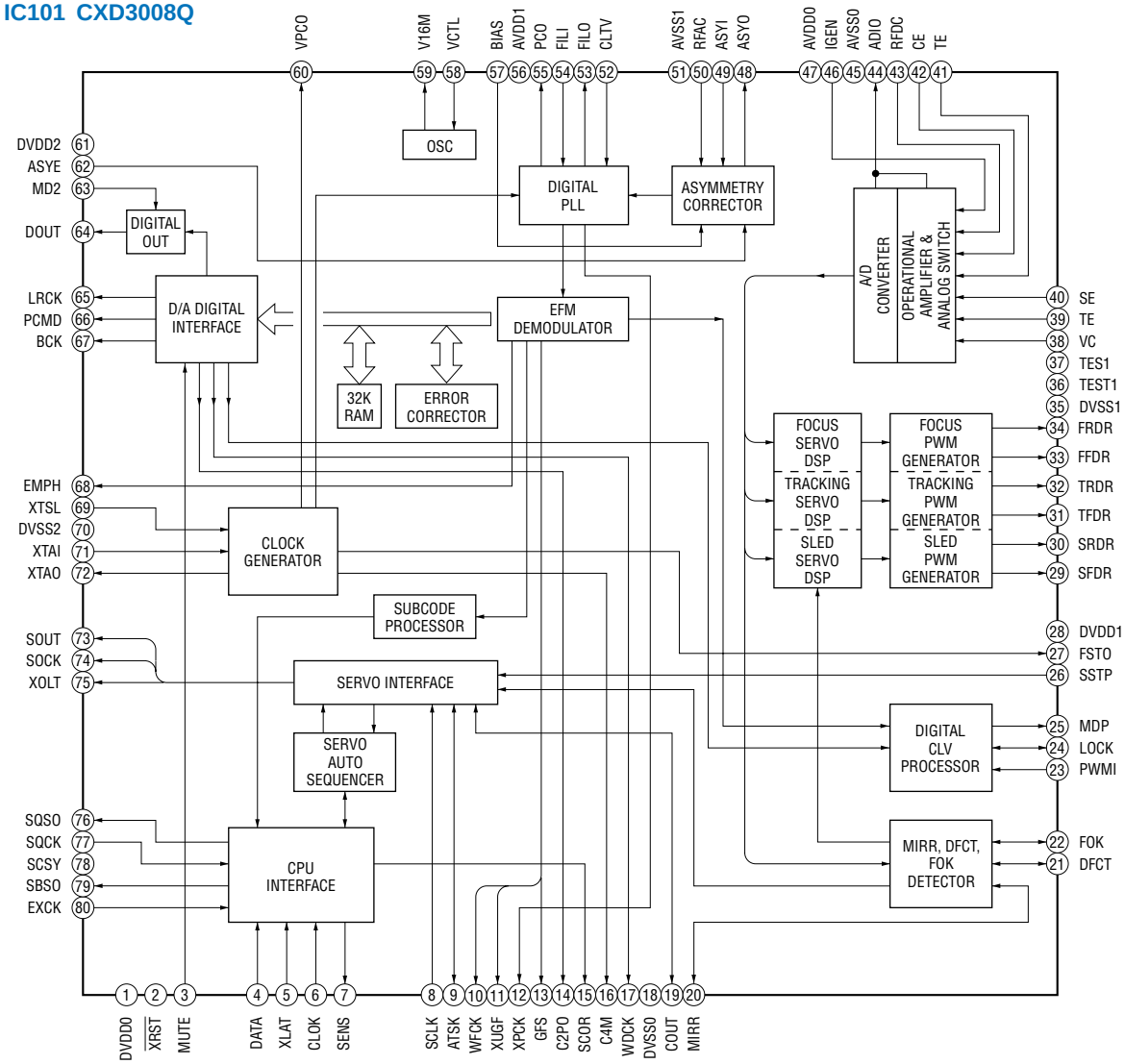
• IC601 DISPLAY CONTROLLER (TMP88CP77F-1A22) (PANEL BOARD)

Pin No.	Pin Name	I/O	Description
1	VOL A	I	VOLUME A signal input.
2	VOL B	I	VOLUME B signal input.
3	HEADPHONE	I	Headphone detect signal input. H=ON, L=OFF
4	N.C	I	Not used.
5	EXIST3 LED	O	EXIST LED of disc3 drive signal output.
6	PLAY3 LED	O	PLAY LED of disc3 drive signal output.
7	EXIST2 LED	O	EXIST LED of disc2 drive signal output.
8	PLAY2 LED	O	PLAY LED of disc2 drive signal output.
9	EXIST1 LED	O	EXIST LED of disc1 drive signal output.
10	PLAY1 LED	O	PLAY LED of disc1 drive signal output.
11	GROOVE LED	O	GROOVE LED drive signal output.(high active)
12	FILE SEL LED	O	Cursol LED drive signal output.
13	BASS SHIFT LED	O	V-GROOVE LED drive signal output.
14	FUNCTIONS LED	O	Function indicator LED drive signal output.
15	REC/PAUSE	O	REC/PAUSE LED drive signal output.(high active)
16	SURROUND	O	SURROUND LED drive signal output.(high active)
17-19	KEY0-2	I	KEY input. (AD)
20	Super Low Freq (BPF 0)	I	BPF input. (AD)
21-25	BPF1-5	I	BPF input. (AD)
26	ALL BAND	I	BPF input. (AD)
27	TIMER LED	O	TIMER LED driver output.
28	POWER	O	I/⏻ LED output.
29	VSS	—	Ground.
30	AVSS	—	Ground.
31	AVREF	—	Analog reference voltage.
32	VDD	—	Power supply (+5V)
33-49	G17-1	O	FL gride signal output.
50	P1	O	FL segment signal output.
51	VDD VFT	—	Power supply (+5V)
52-85	P2-35	O	FL segment signal output.
86	N.C	I	Not used.
87	VKK	—	–30V driving power for FL.
88	VDD	—	Power supply (+5V)
89	Xin	I	12.5MHz (Xin)
90	VSS	—	Ground.
91	Xout	O	12.5MHz (Xout)
92	RESET	I	RESET (low active)
93-94	N.C	I	Not used.
95	TEST	I	Connected to ground.
96	WAKE UP	O	WAKE UP signal output for master controller. (PULL UP)
97	I2C data	O	IIC SDA
98	I2C clk	O	IIC SCL
99	N.C	I	Not used.
100	SIRCS	I	Remote commander input. (input capture)

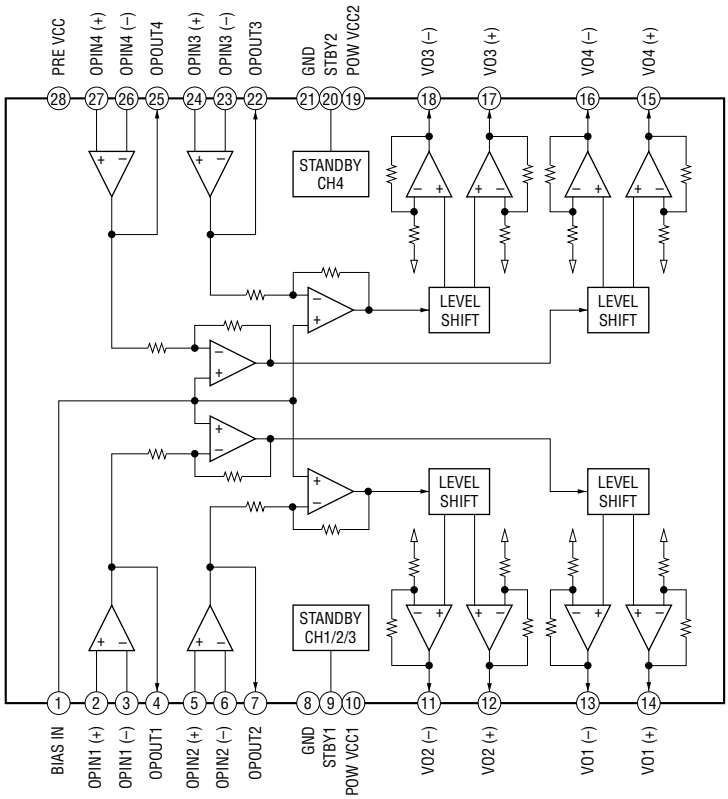
7-24. IC BLOCK DIAGRAMS

– BD Board –

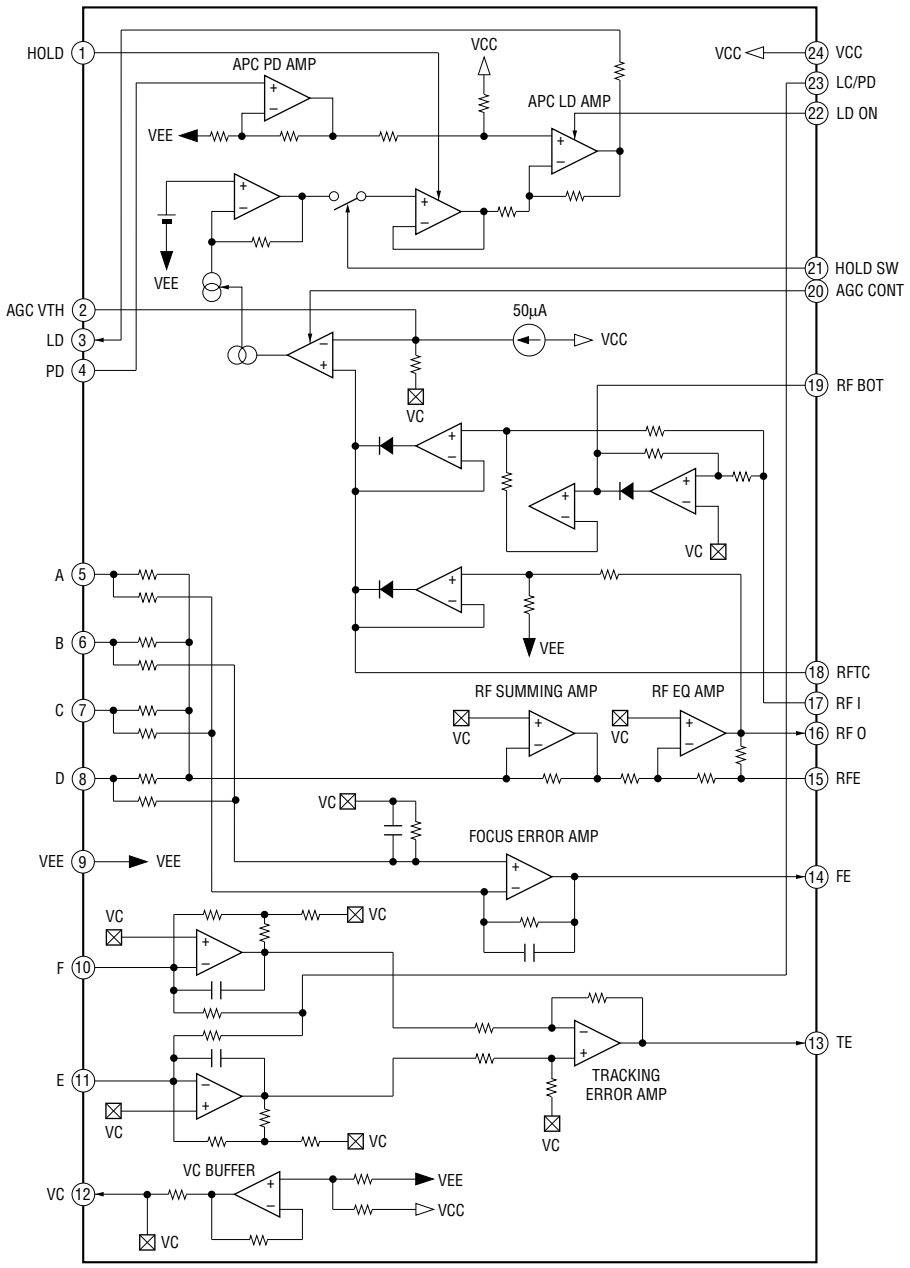
IC101 CXD3008Q



IC102 BA5982FM

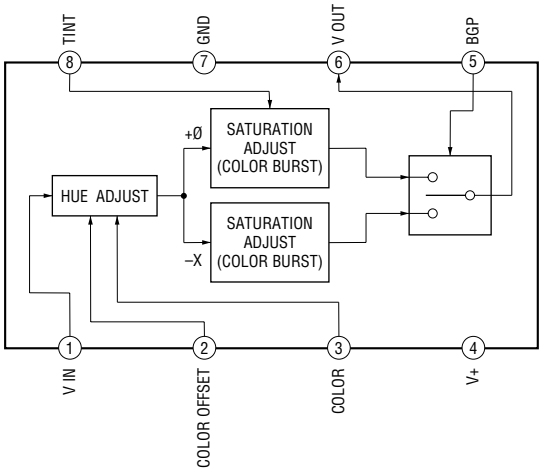


IC103 CXA2568M-T6

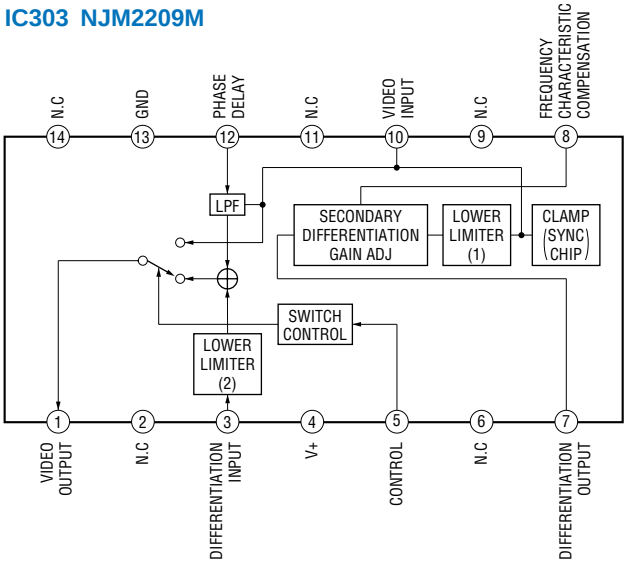


– VIDEO Board –

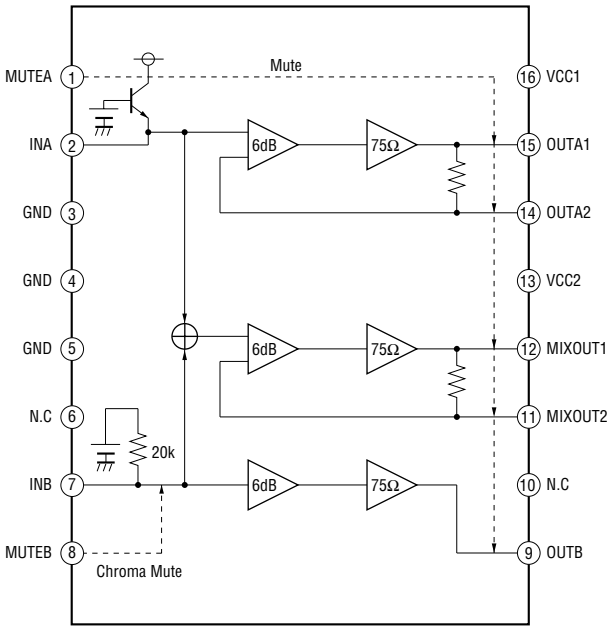
IC302 NJM2255M



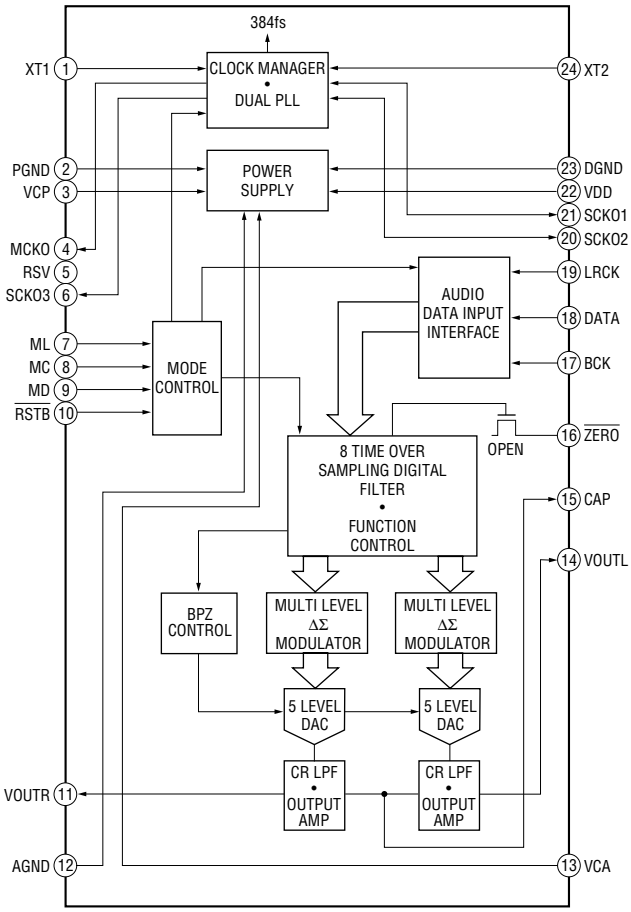
IC303 NJM2209M



IC304 BA7665FS-E2

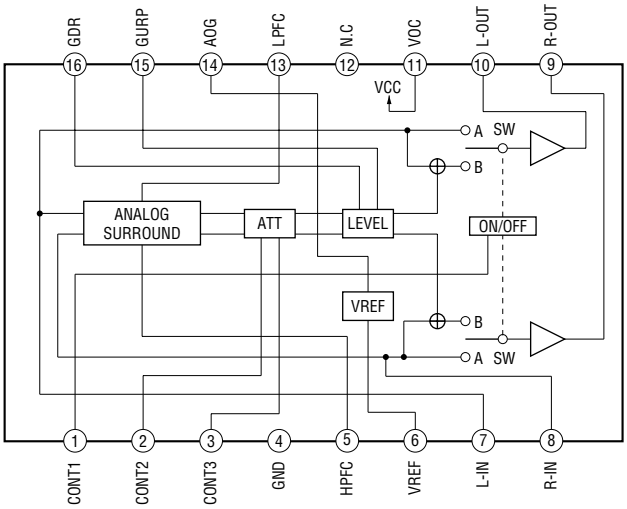


IC509 PCM1727E-2/T2

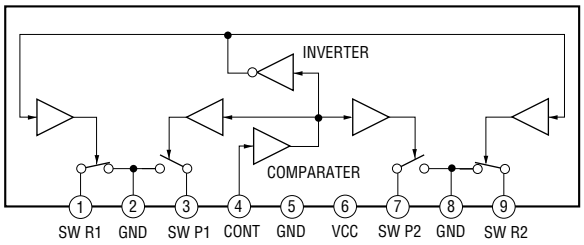


– MAIN Board –

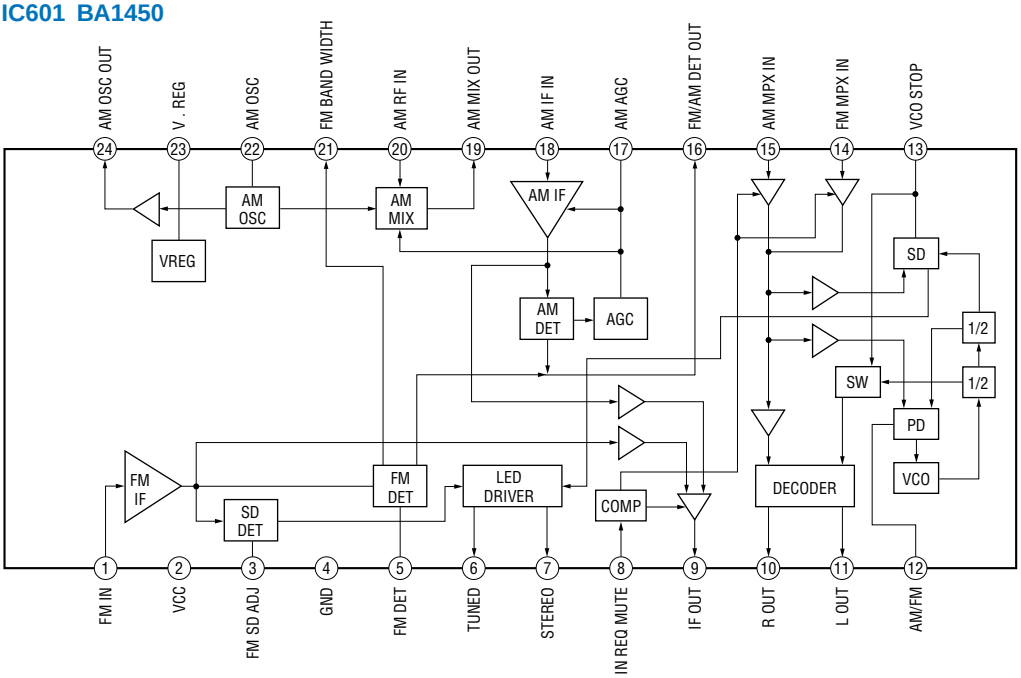
IC103 LA2615



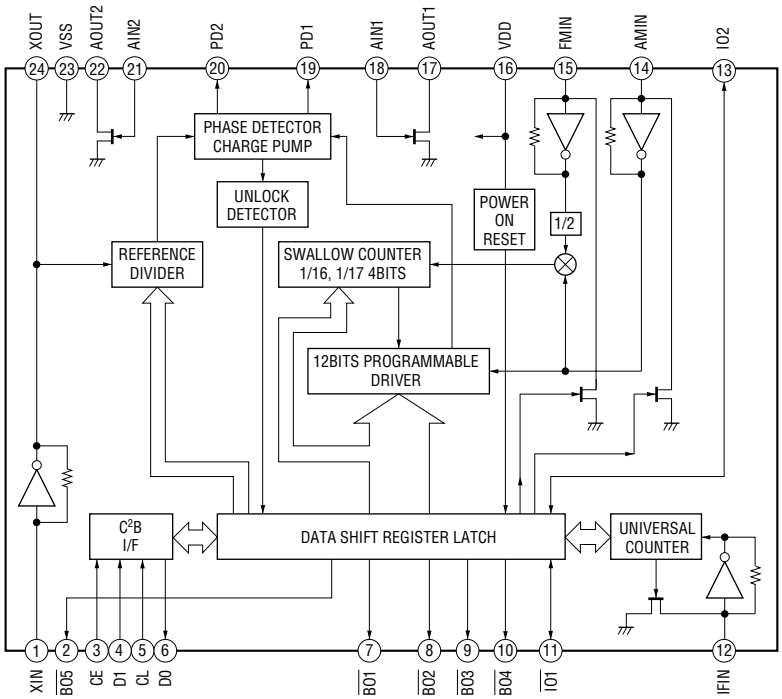
IC302 µPC1330HA



IC601 BA1450

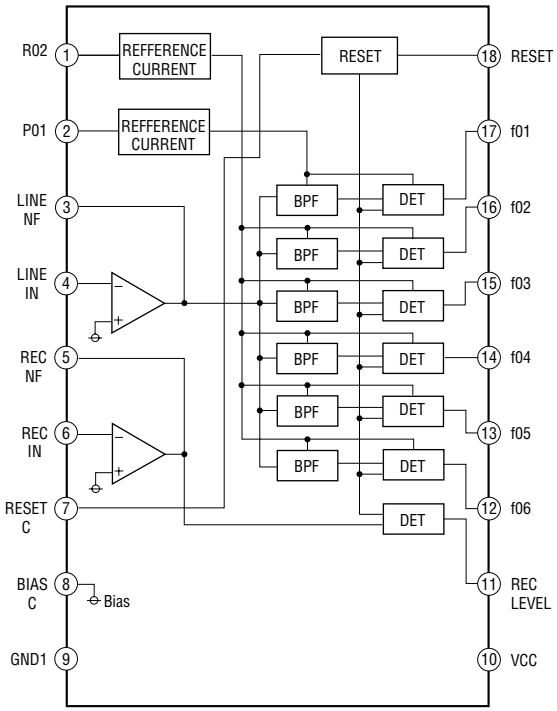


IC651 LC72130

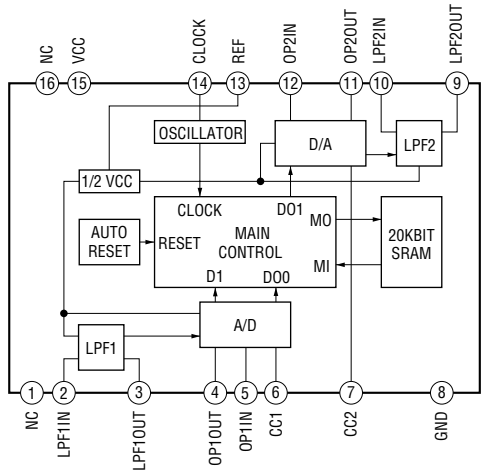


– PANEL Board –

IC602 BA3830F-E2

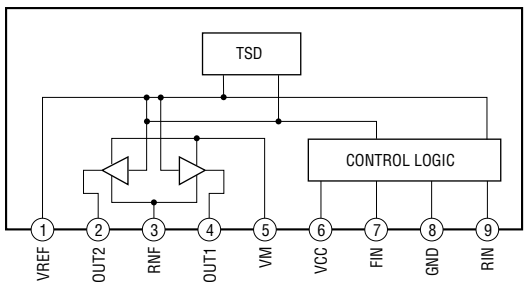


IC721 M65850FP



– DRIVER Board –

IC701 BA6956AN



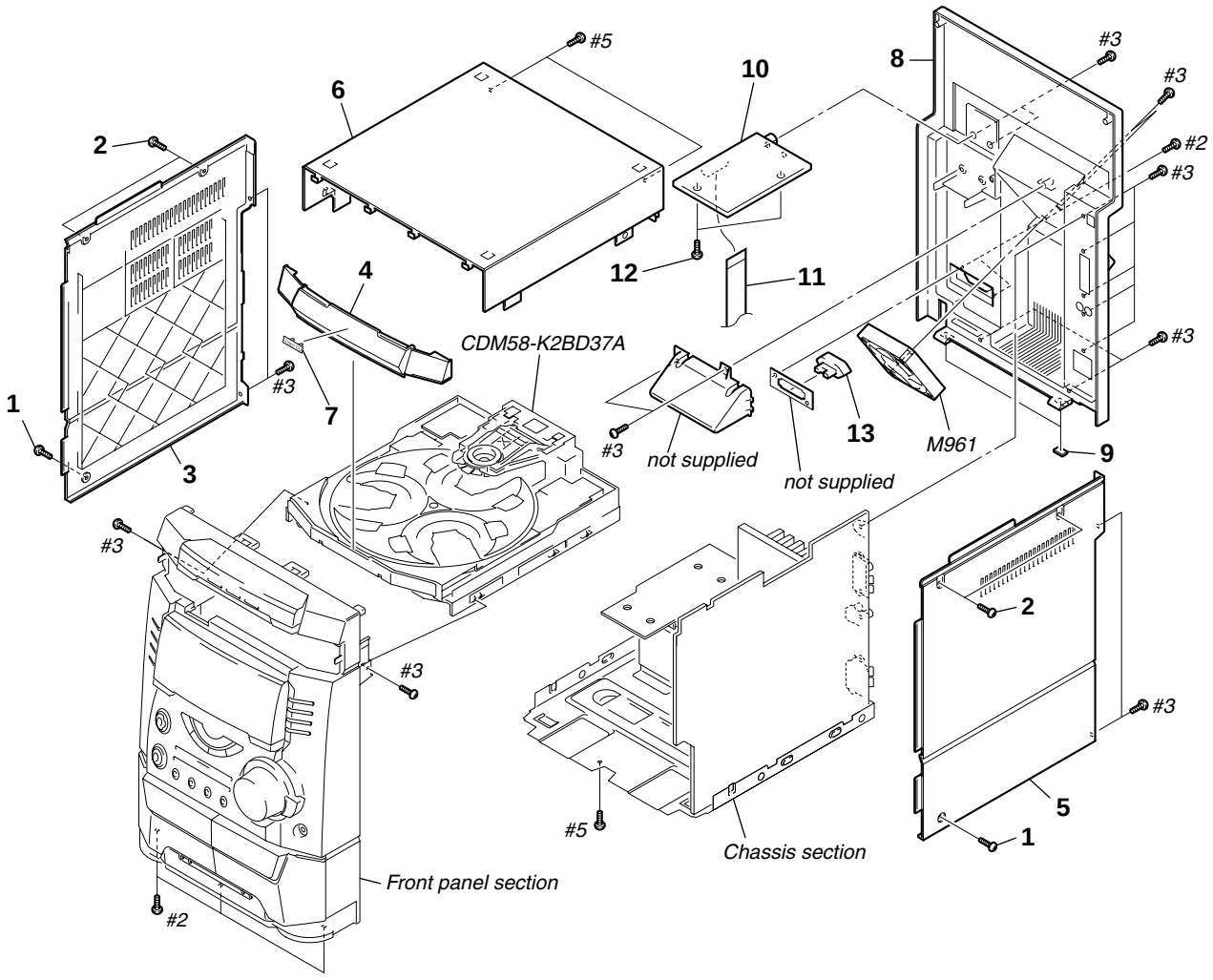
SECTION 8
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  EA : Saudi Arabia model
  IA : Indonesian model
  MY : Malaysia model
  SP : Singapore model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of the electrical parts list.

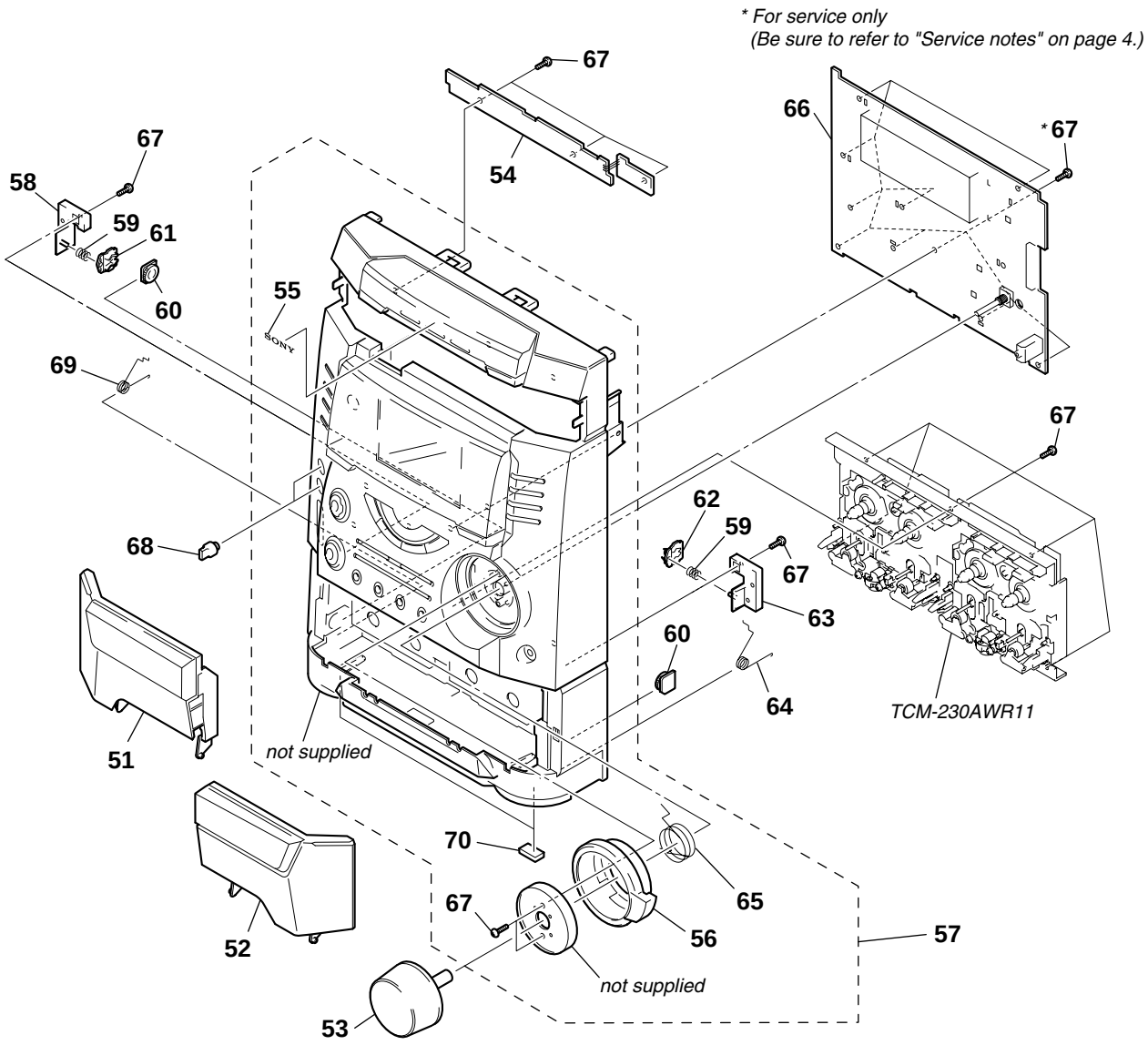
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) COVER SECTION



Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2)	
2	3-363-099-41	SCREW (CASE 3 TP2)	
3	4-225-038-21	SIDE PANEL L	
4	X-4952-778-1	LOADING PANEL ASSY (EA, MY, SP)	
4	X-4952-779-1	LOADING PANEL ASSY (E)	
4	X-4952-783-1	LOADING PANEL ASSY (IA)	
5	4-225-039-21	SIDE PANEL R	
6	4-224-550-21	COVER (TOP) (IA)	
6	4-224-550-41	COVER (TOP) (E, EA, MY, SP)	
7	4-991-781-01	EMBLEM (VCD)	
8	4-225-040-71	BACK PANEL (E, EA, MY, SP)	
8	4-227-061-21	BACK PANEL (IA)	
9	4-225-252-01	CUSHION (FOOT)	
10	A-4724-973-A	VIDEO BOARD, COMPLETE	
11	1-792-246-11	WIRE (FLAT TYPE) (23 CORE)	
12	4-951-620-01	SCREW (2.6X8), +BVTP	
⚠13	1-526-794-11	OUTLET, AC	
M961	1-763-072-11	FAN, D. C.	

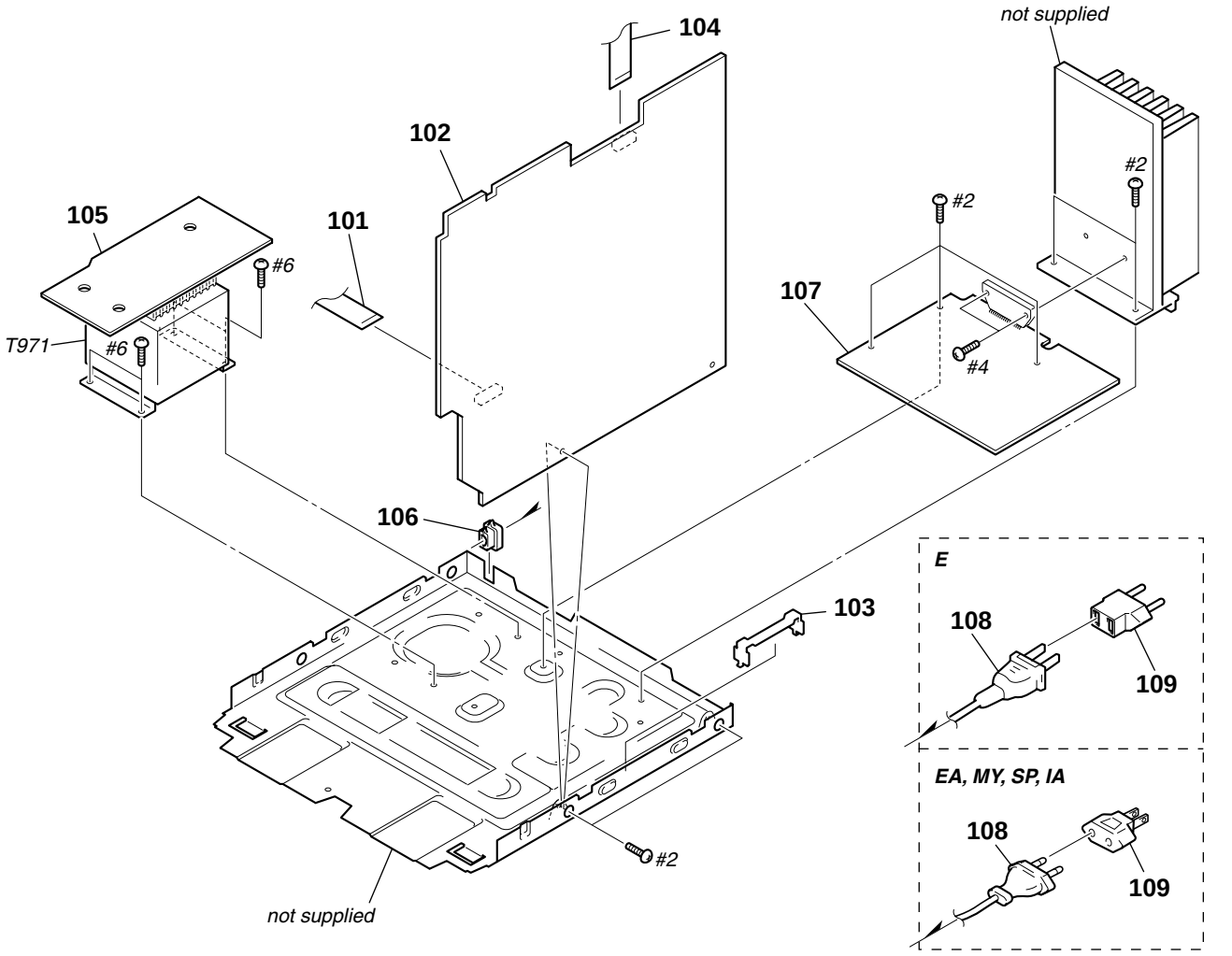
(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-4952-418-1	TC HOLDER (L) ASSY (IA)	
51	X-4952-790-1	TC HOLDER (L) ASSY (E, EA)	
51	X-4953-019-1	TC HOLDER (L) ASSY (EA, MY, SP)	
52	X-4952-729-1	TC HOLDER (R) ASSY (EA, MY, SP)	
52	X-4952-730-1	TC HOLDER (R) ASSY (IA)	
52	X-4952-793-1	TC HOLDER (R) ASSY (E)	
53	4-225-032-01	VOL KNOB	
54	A-4473-074-A	CD SWITCH BOARD, COMPLETE	
55	4-962-708-71	EMBLEM (4-A), SONY	
56	4-225-033-01	FR KNOB	
57	X-4952-671-1	FRONT PANEL ASSY (EA, MY, SP)	
57	X-4952-672-1	FRONT PANEL ASSY (E)	
57	X-4952-676-1	FRONT PANEL ASSY (IA)	
58	4-224-562-01	BRACKET (HEART CAM L)	

Ref. No.	Part No.	Description	Remark
59	4-224-803-01	SPRING (PUSH), COMPRESSION COIL	
60	4-224-104-11	DAMPER	
61	4-224-560-01	CAM (L), HEART	
62	4-224-559-01	CAM (R), HEART	
63	4-224-561-01	BRACKET (HEART CAM R)	
64	4-225-053-01	SPRING R	
65	4-225-054-01	SPRING FR	
66	A-4473-076-A	PANEL BOARD, COMPLETE (E, EA, MY, SP)	
66	A-4473-525-A	PANEL BOARD, COMPLETE (IA)	
67	4-951-620-01	SCREW (2.6X8), +BVTP	
68	4-224-578-01	KNOB (MIC)	
69	4-225-052-01	SPRING L	
70	4-225-252-01	CUSHION (FOOT)	

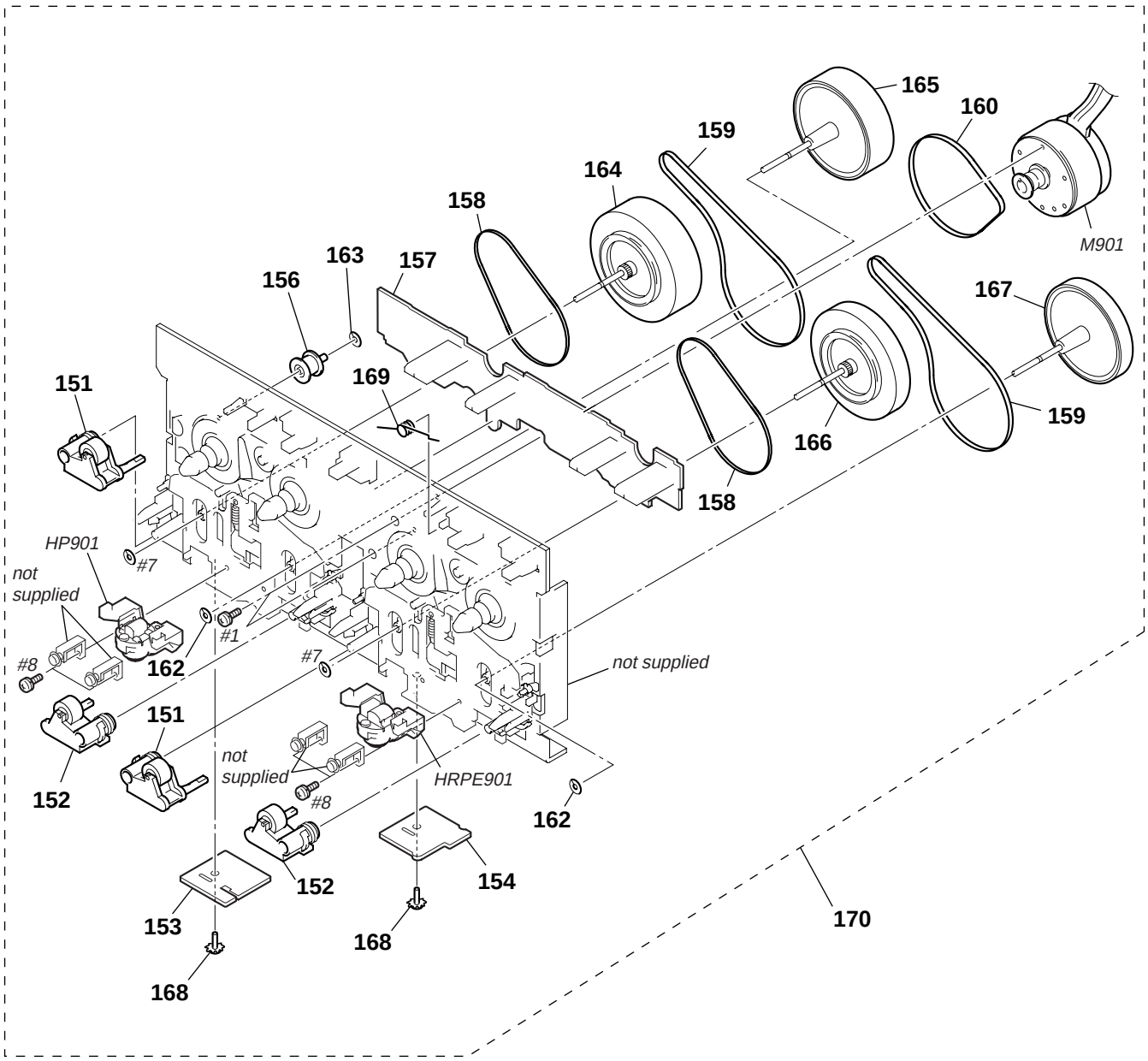
(3) CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
101	1-773-045-11	WIRE (FLAT TYPE) (17 CORE)	
102	A-4428-472-A	MAIN BOARD, COMPLETE (E, MY, SP)	
102	A-4473-078-A	MAIN BOARD, COMPLETE (EA)	
102	A-4473-527-A	MAIN BOARD, COMPLETE (IA)	
* 103	4-988-533-01	HOLDER, PWB	
104	1-690-589-31	WIRE (FLAT TYPE) (13 CORE)	
105	1-676-808-11	TRANS BOARD	
* 106	3-703-244-00	BUSHING (2104), CORD	
107	A-4428-344-A	POWER AMP BOARD, COMPLETE (IA)	
107	A-4428-483-A	POWER AMP BOARD, COMPLETE (E, EA, MY, SP)	
⚠108	1-575-653-11	CORD, POWER (E)	
⚠108	1-777-071-21	CORD, POWER (MY, SP)	
⚠108	1-777-071-51	CORD, POWER (EA, IA)	
⚠109	1-569-007-11	ADAPTOR, CONVERSION 2P (E)	
⚠109	1-569-008-21	ADAPTOR, CONVERSION 2P (EA, MY, SP, IA)	
⚠T971	1-435-325-11	POWER TRANSFORMER	

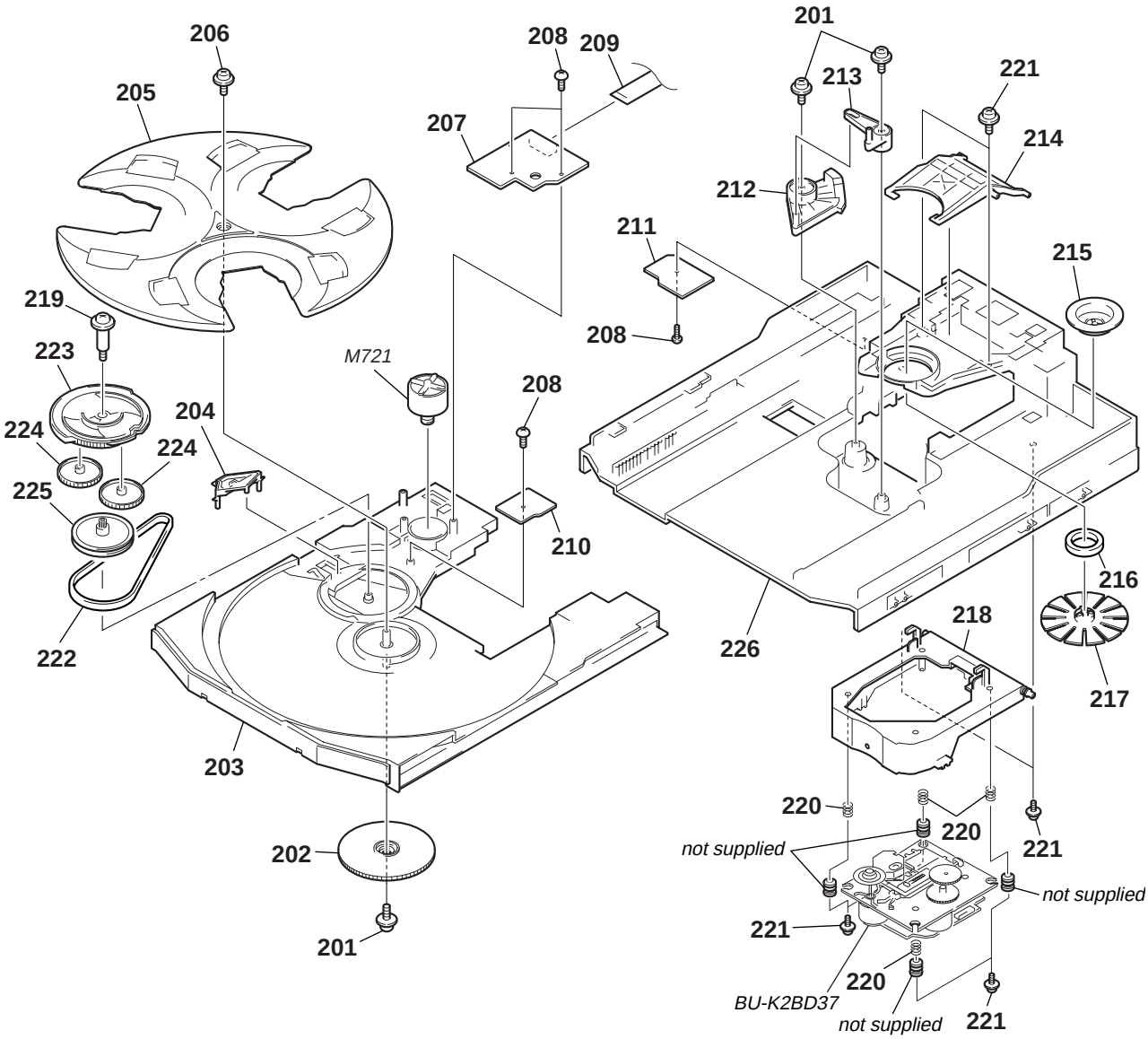
(4) TAPE MECHANISM DESK SECTION (TCM-230AWR11)



Ref. No.	Part No.	Description	Remark
151	X-3374-156-5	PINCH LEVER (REV) ASSY	
152	X-3374-155-5	PINCH LEVER (FWD) ASSY	
153	A-2007-839-A	HEAD (A) BOARD, COMPLETE	
154	A-2007-840-A	HEAD (B) BOARD, COMPLETE	
156	3-040-580-02	PULLEY (TENSION)	
157	A-2007-838-A	LEAF SW BOARD, COMPLETE	
158	3-041-947-01	BELT (FR)	
159	3-041-946-01	BELT (CAPSTAN B)	
160	4-227-239-01	BELT (CAPSTAN C)	
162	3-019-208-01	WASHER, STOPPER	
163	3-016-533-01	WASHER (FR), STOPPER	

Ref. No.	Part No.	Description	Remark
164	X-3378-041-1	FLYWHEEL (A-REV) ASSY	
165	X-3378-040-1	FLYWHEEL (A-FWD) ASSY	
166	X-3378-043-1	FLYWHEEL (B-REV) ASSY	
167	X-3378-042-1	FLYWHEEL (B-FWD) ASSY	
168	4-227-872-11	SCREW (+PTT 2X4), GROUND POINT	
169	4-227-455-02	SPING (HALF), TORSION	
170	A-2100-894-A	TAPE MECHANISM DECK (TCM-230AWR11)	
HP901	X-4953-985-1	BLOCK (A) ASSY, HEAD (PB)	
HRPE901	X-4953-986-1	BLOCK (B) ASSY, HEAD (REC/PB/ERASE)	
M901	X-3378-241-1	MOTOR ASSY (WITH PULLEY) (CAPSTAN/REEL)	

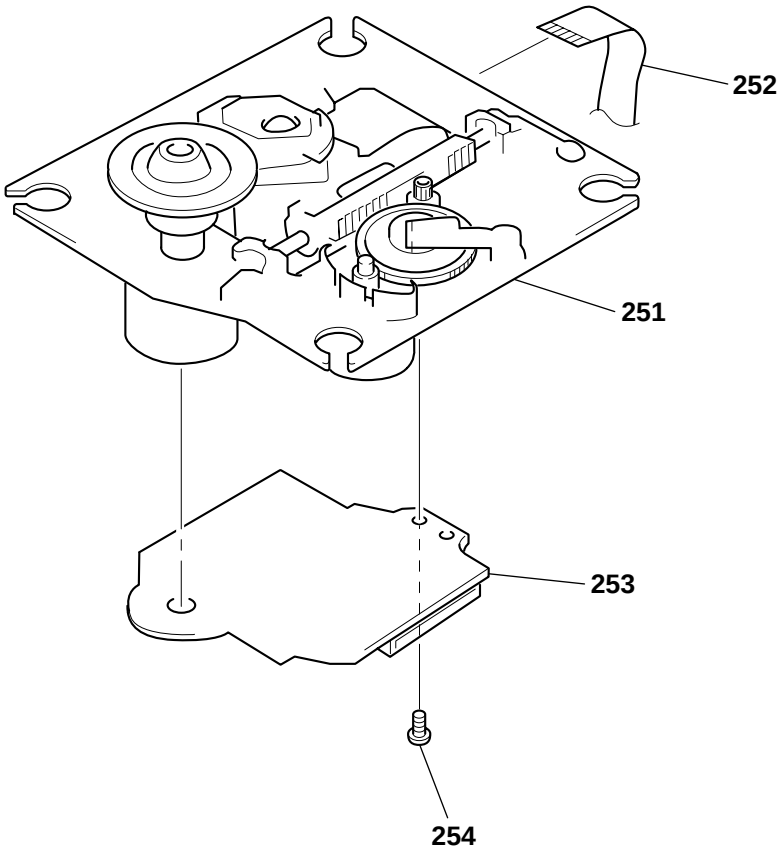
(5) CD MECHANISM DECK SECTION (CDM58-K2BD37A)



Ref. No.	Part No.	Description	Remark
201	4-933-134-11	SCREW (+PTPWH M2.6X8)	
202	4-221-679-01	CAM (RELAY)	
203	4-221-675-01	TABLE	
204	4-221-686-01	LEVER (CHANGE)	
205	4-221-676-01	TRAY	
206	4-933-134-51	SCREW (+PTPWH 2.6X8)	
207	1-675-910-11	MOTOR BOARD	
208	4-951-620-01	SCREW (2.6X8), +BVTP	
209	1-791-983-12	WIRE (FLAT TYPE) (8 CORE)	
210	1-675-911-11	SENSOR BOARD	
211	1-675-912-11	DRIVER BOARD	
212	X-4952-608-1	CAM (U/D) ASSY	
213	4-221-681-01	LEVER (EX)	
214	4-221-682-01	LEVER (LIFTER)	

Ref. No.	Part No.	Description	Remark
215	4-221-688-01	PULLEY (B), CHUCKING	
216	1-471-035-11	MAGNET ASSY	
217	X-4952-019-1	PULLEY (A) ASSY, CHUCKING	
218	X-4951-889-1	HOLDER (BU) ASSY	
219	4-222-097-01	SCREW, STEP	
220	4-227-045-11	SPRING (INSULATOR), COIL	
221	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
222	4-222-095-01	BELT	
223	4-221-678-02	CAM (CONTROL)	
224	4-221-683-01	GEAR (U)	
225	4-221-685-01	PULLEY (S)	
226	4-221-674-03	CHASSIS	
M721	A-4672-826-A	MOTOR ASSY (TURN)	

(6) BASE UNIT SECTION (BU-K2BD37A)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠251	8-820-116-01	OPTICAL PICK-UP KSM-213DAP/Z-NP	
252	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
253	A-4725-001-A	BD BOARD, COMPLETE	
254	4-951-620-01	SCREW (2.6X8), +BVTP	

BD

SECTION 9
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  EA : Saudi Arabia model
  IA : Indonesian model
  MY : Malaysia model
  SP : Singapore model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-4725-001-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C110	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT CHIP	100uF	20%	4V
C118	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C119	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C120	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C121	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C122	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C123	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C124	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C126	1-124-779-00	ELECT CHIP	10uF	20%	16V
C130	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C140	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C154	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C159	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C161	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C170	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C180	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C181	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C182	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C183	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C184	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C185	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C186	1-128-065-11	ELECT CHIP	68uF	20%	10V
C187	1-163-038-00	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN101	1-770-706-11	CONNECTOR, FFC/FPC 23P			
CN102	1-777-937-11	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC101	8-752-397-42	IC CXD3008Q			
IC102	8-759-640-22	IC BA5982FM			
IC103	8-752-085-51	IC CXA2568M-T6			
IC104	8-759-398-25	IC TC7SH04F (TE85L)			
		< COIL >			
L101	1-414-234-22	FERRITE BEAD			
L102	1-410-377-31	INDUCTOR CHIP	4.7uH		
		< TRANSISTOR >			
Q101	8-729-049-31	TRANSISTOR	2SB710-RTX		
		< RESISTOR >			
R101	1-216-077-00	RES-CHIP	15K	5%	1/10W
R102	1-216-097-00	RES-CHIP	100K	5%	1/10W
R103	1-216-077-00	RES-CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-049-11	RES-CHIP	1K	5%	1/10W
R107	1-216-073-00	METAL CHIP	10K	5%	1/10W
R108	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R109	1-216-121-00	RES-CHIP	1M	5%	1/10W
R110	1-216-295-00	SHORT	0		
R112	1-216-025-00	RES-CHIP	100	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-00	RES-CHIP	100K	5%	1/10W
R125	1-216-033-00	METAL CHIP	220	5%	1/10W
R126	1-216-033-00	METAL CHIP	220	5%	1/10W
R127	1-216-033-00	METAL CHIP	220	5%	1/10W
R131	1-216-033-00	METAL CHIP	220	5%	1/10W
R135	1-216-295-00	SHORT	0		
R136	1-216-295-00	SHORT	0		
R137	1-216-295-00	SHORT	0		
R138	1-216-295-00	SHORT	0		
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W
R145	1-216-121-00	RES-CHIP	1M	5%	1/10W
R146	1-216-121-00	RES-CHIP	1M	5%	1/10W

Ref. No.	Part No.	Description			Remark
R147	1-216-041-00	METAL CHIP	470	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-003-11	RES-CHIP	12	5%	1/10W
R150	1-216-073-00	METAL CHIP	10K	5%	1/10W
R154	1-216-025-00	RES-CHIP	100	5%	1/10W
R155	1-216-025-00	RES-CHIP	100	5%	1/10W
R156	1-216-025-00	RES-CHIP	100	5%	1/10W
R157	1-216-025-00	RES-CHIP	100	5%	1/10W
R158	1-216-073-00	METAL CHIP	10K	5%	1/10W
R159	1-216-089-00	RES-CHIP	47K	5%	1/10W
R161	1-216-295-00	SHORT	0		
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
R171	1-216-025-00	RES-CHIP	100	5%	1/10W
R172	1-216-025-00	RES-CHIP	100	5%	1/10W
R173	1-216-025-00	RES-CHIP	100	5%	1/10W
R175	1-216-025-00	RES-CHIP	100	5%	1/10W
R180	1-216-097-00	RES-CHIP	100K	5%	1/10W
R181	1-216-100-00	RES-CHIP	130K	5%	1/10W
R182	1-216-081-00	METAL CHIP	22K	5%	1/10W
R183	1-216-081-00	METAL CHIP	22K	5%	1/10W
R184	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R185	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R186	1-216-081-00	METAL CHIP	22K	5%	1/10W
R187	1-216-081-00	METAL CHIP	22K	5%	1/10W
R188	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R189	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R190	1-216-081-00	METAL CHIP	22K	5%	1/10W
R191	1-216-081-00	METAL CHIP	22K	5%	1/10W
R192	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R193	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R194	1-216-295-00	SHORT	0		
R203	1-216-025-00	RES-CHIP	100	5%	1/10W
R204	1-216-025-00	RES-CHIP	100	5%	1/10W
R205	1-216-025-00	RES-CHIP	100	5%	1/10W
R206	1-216-295-00	SHORT	0		
R210	1-216-295-00	SHORT	0		
		< SWITCH >			
S101	1-771-853-11	SWITCH, DETECTION (LIMIT)			
**********					
	A-4473-074-A	CD SWITCH BOARD, COMPLETE			
		**********			
		< LED >			
D630	8-719-056-13	LED SML79423C-TP15 (DISC 1)			
D631	8-719-056-13	LED SML79423C-TP15 (DISC 2)			
D632	8-719-056-13	LED SML79423C-TP15 (DISC 3)			
		< TRANSISTOR >			
Q630	8-729-422-57	TRANSISTOR	BN1A4M-TP		
Q631	8-729-422-57	TRANSISTOR	BN1A4M-TP		
Q632	8-729-422-57	TRANSISTOR	BN1A4M-TP		
Q633	8-729-422-57	TRANSISTOR	BN1A4M-TP		
Q634	8-729-422-57	TRANSISTOR	BN1A4M-TP		
Q635	8-729-422-57	TRANSISTOR	BN1A4M-TP		

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R685	1-249-417-11	CARBON	1K	5%	1/4W
R686	1-249-418-11	CARBON	1.2K	5%	1/4W
R687	1-249-420-11	CARBON	1.8K	5%	1/4W
R688	1-249-422-11	CARBON	2.7K	5%	1/4W
R689	1-247-843-11	CARBON	3.3K	5%	1/4W
R690	1-249-425-11	CARBON	4.7K	5%	1/4W
R691	1-249-427-11	CARBON	6.8K	5%	1/4W
R692	1-249-429-11	CARBON	10K	5%	1/4W
R750	1-249-406-11	CARBON	120	5%	1/4W
R751	1-249-406-11	CARBON	120	5%	1/4W
R752	1-249-406-11	CARBON	120	5%	1/4W
R753	1-249-406-11	CARBON	120	5%	1/4W
R754	1-249-406-11	CARBON	120	5%	1/4W
R755	1-249-406-11	CARBON	120	5%	1/4W
		< SWITCH >			
S642	1-771-410-21	SWITCH, TACTILE (DISC SKIP/EX-CHANGE)			
S643	1-771-410-21	SWITCH, TACTILE (DISC 1)			
S644	1-771-410-21	SWITCH, TACTILE (DISC 2)			
S645	1-771-410-21	SWITCH, TACTILE (DISC 3)			
S646	1-771-410-21	SWITCH, TACTILE (⏏ OPEN/CLOSE (CD))			
S647	1-771-410-21	SWITCH, TACTILE (PREV)			
S648	1-771-410-21	SWITCH, TACTILE (NEXT)			
S649	1-771-410-21	SWITCH, TACTILE (RETURN)			
**********					
	1-675-912-11	DRIVER BOARD			
		**********			
		< CAPACITOR >			
C702	1-126-964-51	ELECT	10uF	20%	50V
		< CONNECTOR >			
CN701	1-785-336-11	PIN, CONNECTOR (LIGHT ANGLE) 10P			
CN702	1-785-550-11	CONNECTOR, FFC/FPC 8P			
		< DIODE >			
D701	8-719-983-63	DIODE MTZJ-T-72-3.3B			
		< IC >			
IC701	8-759-598-69	IC BA6956AN			
		< RESISTOR >			
R701	1-249-411-11	CARBON	330	5%	1/4W
R702	1-249-401-11	CARBON	47	5%	1/4W
**********					
	1-676-220-12	HEAD (A) BOARD			
		**********			
		< CONNECTOR >			
* CN1	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P			
**********					

HEAD (B) | LEAF SW | MAIN

Ref. No.	Part No.	Description			Remark
	1-676-221-12	HEAD (B) BOARD			
		**********			
		< CONNECTOR >			
CN2	1-564-722-11	PIN, CONNECTOR (SMALL TYPE) 6P			
**********					
	A-2007-838-A	LEAF SW BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1001	1-107-716-11	ELECT	33uF	20%	10V
		< CONNECTOR >			
CN1001	1-568-860-21	SOCKET, CONNECTOR 17P			
		< DIODE >			
D1001	8-719-911-19	DIODE 1SS133T-72			
D1002	8-719-911-19	DIODE 1SS133T-72			
		< PHOTO INTERRUPTER >			
IC1001	8-749-014-38	PHOTO INTERRUPTER SG-264			
IC1002	8-749-014-38	PHOTO INTERRUPTER SG-264			
		< TRANSISTOR >			
Q1001	8-729-029-56	TRANSISTOR	DTA144ESA-TP		
		< RESISTOR >			
R907	1-247-879-11	CARBON	100K	5%	1/4W
R1001	1-249-409-11	CARBON	220	5%	1/4W
R1002	1-249-409-11	CARBON	220	5%	1/4W
R1003	1-249-414-11	CARBON	560	5%	1/4W
R1004	1-247-834-11	CARBON	1.3K	5%	1/4W
R1005	1-247-818-11	CARBON	300	5%	1/4W
R1006	1-247-864-11	CARBON	24K	5%	1/4W
R1007	1-247-780-00	CARBON	7.5	5%	1/4W
R1008	1-249-417-11	CARBON	1K	5%	1/4W
		< VARIABLE RESISTOR >			
RV1001	1-241-785-11	RES, ADJ, CARBON 10K			
RV1002	1-241-785-11	RES, ADJ, CARBON 10K			
		< SWITCH >			
S1001	1-570-953-11	SWITCH, PUSH (1 KEY) (A PLAY)			
S1002	1-570-953-11	SWITCH, PUSH (1 KEY) (B PLAY)			
S1003	1-771-333-11	SWITCH, LEAF (A HALF)			
S1004	1-771-536-11	SWITCH, LEAF (A 120/70)			
S1005	1-771-536-11	SWITCH, LEAF (REC A)			
S1006	1-771-333-11	SWITCH, LEAF (B HALF)			
S1008	1-771-536-11	SWITCH, LEAF (B 120/70)			
S1009	1-771-536-11	SWITCH, LEAF (REC B)			
**********					

Ref. No.	Part No.	Description			Remark
	A-4428-472-A	MAIN BOARD, COMPLETE (E, MY, SP)			
	A-4473-078-A	MAIN BOARD, COMPLETE (EA)			
	A-4473-527-A	MAIN BOARD, COMPLETE (IA)			
		**********			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C101	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C102	1-126-961-11	ELECT	2.2uF	20%	50V
C103	1-126-964-11	ELECT	10uF	20%	50V
C104	1-126-964-11	ELECT	10uF	20%	50V
C105	1-126-964-11	ELECT	10uF	20%	50V
C106	1-136-161-00	MYLAR	0.047uF	5%	50V
C107	1-136-495-11	MYLAR	0.068uF	5%	50V
C108	1-136-495-11	MYLAR	0.068uF	5%	50V
C109	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C110	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C111	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C112	1-126-961-11	ELECT	2.2uF	20%	50V
C113	1-126-957-11	ELECT	0.22uF	20%	50V
C115	1-136-169-00	MYLAR	0.22uF	5%	50V
C116	1-136-169-00	MYLAR	0.22uF	5%	50V
C117	1-126-964-11	ELECT	10uF	20%	50V
C118	1-126-961-11	ELECT	2.2uF	20%	50V
C121	1-126-964-11	ELECT	10uF	20%	50V
C122	1-126-964-11	ELECT	10uF	20%	50V
C123	1-126-964-11	ELECT	10uF	20%	50V
C124	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C131	1-136-169-00	MYLAR	0.22uF	5%	50V
C132	1-126-964-11	ELECT	10uF	20%	50V
C133	1-126-925-11	ELECT	470uF	20%	10V
C134	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C135	1-126-964-11	ELECT	10uF	20%	50V
C140	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C144	1-126-964-11	ELECT	10uF	20%	50V
C146	1-126-925-11	ELECT	470uF	20%	10V
C151	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C152	1-126-961-11	ELECT	2.2uF	20%	50V
C153	1-126-964-11	ELECT	10uF	20%	50V
C154	1-126-964-11	ELECT	10uF	20%	50V
C155	1-126-964-11	ELECT	10uF	20%	50V
C156	1-136-161-00	MYLAR	0.047uF	5%	50V
C157	1-136-495-11	MYLAR	0.068uF	5%	50V
C158	1-136-495-11	MYLAR	0.068uF	5%	50V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C160	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C162	1-126-961-11	ELECT	2.2uF	20%	50V
C165	1-136-169-00	MYLAR	0.22uF	5%	50V
C166	1-136-169-00	MYLAR	0.22uF	5%	50V
C167	1-126-964-11	ELECT	10uF	20%	50V
C171	1-126-964-11	ELECT	10uF	20%	50V
C172	1-126-964-11	ELECT	10uF	20%	50V
C181	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C182	1-126-963-11	ELECT	4.7uF	20%	50V
C185	1-126-960-11	ELECT	1uF	20%	50V

Ref. No.	Part No.	Description			Remark
C186	1-126-960-11	ELECT	1uF	20%	50V
C187	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C188	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C189	1-126-963-11	ELECT	4.7uF	20%	50V
C199	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-104-665-11	ELECT	100uF	20%	10V
C202	1-126-925-11	ELECT	470uF	20%	10V
C203	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C204	1-126-961-11	ELECT	2.2uF	20%	50V
C205	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C206	1-126-961-11	ELECT	2.2uF	20%	50V
C207	1-126-916-11	ELECT	1000uF	20%	6.3V
C209	1-126-925-11	ELECT	470uF	20%	10V
C212	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C301	1-126-960-11	ELECT	1uF	20%	50V
C302	1-130-479-00	MYLAR	0.0047uF	5%	50V
C303	1-136-165-00	MYLAR	0.1uF	5%	50V
C304	1-136-165-00	MYLAR	0.1uF	5%	50V
C305	1-126-964-11	ELECT	10uF	20%	50V
C306	1-126-960-11	ELECT	1uF	20%	50V
C307	1-126-959-11	ELECT	0.47uF	20%	50V
C308	1-126-964-11	ELECT	10uF	20%	50V
C309	1-137-194-81	MYLAR	0.47uF	5%	50V
C310	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C311	1-126-964-11	ELECT	10uF	20%	50V
C312	1-126-959-11	ELECT	0.47uF	20%	50V
C313	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C314	1-126-964-11	ELECT	10uF	20%	50V
C315	1-126-963-11	ELECT	4.7uF	20%	50V
C316	1-126-933-11	ELECT	100uF	20%	16V
C317	1-104-665-11	ELECT	100uF	20%	10V
C318	1-126-964-11	ELECT	10uF	20%	50V
C319	1-126-961-11	ELECT	2.2uF	20%	50V
C320	1-126-961-11	ELECT	2.2uF	20%	50V
C321	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C322	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C323	1-136-157-00	MYLAR	0.022uF	5%	50V
C324	1-126-964-11	ELECT	10uF	20%	50V
C325	1-126-965-11	ELECT	22uF	20%	50V
C326	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C327	1-104-665-11	ELECT	100uF	20%	10V
C328	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C329	1-130-483-00	MYLAR	0.01uF	5%	50V
C330	1-126-964-11	ELECT	10uF	20%	50V
C331	1-126-965-11	ELECT	22uF	20%	50V
C332	1-137-427-11	MYLAR	120PF	5%	50V
C333	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C334	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C335	1-137-150-11	MYLAR	0.01uF	5%	100V
C336	1-126-961-11	ELECT	2.2uF	20%	50V
C337	1-136-155-00	FILM	0.015uF	5%	50V
C338	1-130-481-00	MYLAR	0.0068uF	5%	50V
C339	1-130-481-00	MYLAR	0.0068uF	5%	50V
C340	1-136-156-00	MYLAR	0.018uF	5%	50V
C341	1-126-960-11	ELECT	1uF	20%	50V
C342	1-104-664-11	ELECT	47uF	20%	16V
C351	1-126-960-11	ELECT	1uF	20%	50V
C352	1-130-479-00	MYLAR	0.0047uF	5%	50V
C353	1-136-165-00	MYLAR	0.1uF	5%	50V
C354	1-136-165-00	MYLAR	0.1uF	5%	50V
C355	1-126-964-11	ELECT	10uF	20%	50V
C356	1-126-960-11	ELECT	1uF	20%	50V
C357	1-126-959-11	ELECT	0.47uF	20%	50V
C358	1-126-964-11	ELECT	10uF	20%	50V
C359	1-137-194-81	MYLAR	0.47uF	5%	50V
C360	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C362	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C363	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C368	1-126-964-11	ELECT	10uF	20%	50V
C369	1-126-961-11	ELECT	2.2uF	20%	50V
C370	1-126-961-11	ELECT	2.2uF	20%	50V
C371	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C372	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C373	1-136-157-00	MYLAR	0.022uF	5%	50V
C374	1-126-964-11	ELECT	10uF	20%	50V
C375	1-126-965-11	ELECT	22uF	20%	50V
C376	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C377	1-104-665-11	ELECT	100uF	20%	10V
C378	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C379	1-130-483-00	MYLAR	0.01uF	5%	50V
C380	1-126-964-11	ELECT	10uF	20%	50V
C381	1-126-965-11	ELECT	22uF	20%	50V
C382	1-137-427-11	MYLAR	120PF	5%	50V
C383	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C384	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C385	1-126-964-11	ELECT	10uF	20%	50V
C395	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C410	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C411	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C414	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C416	1-126-916-11	ELECT	1000uF	20%	6.3V
C462	1-104-665-11	ELECT	100uF	20%	10V
C464	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C497	1-126-964-11	ELECT	10uF	20%	50V
C498	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C501	1-136-165-00	MYLAR	0.1uF	5%	50V
C502	1-136-165-00	MYLAR	0.1uF	5%	50V
C503	1-126-964-11	ELECT	10uF	20%	50V
C504	1-109-953-11	ELECT	2.2uF	20%	50V
C505	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C601	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C603	1-104-664-11	ELECT	47uF	20%	16V
C604	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C605	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C607	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C611	1-104-664-11	ELECT	47uF	20%	16V
C612	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C613	1-126-960-11	ELECT	1uF	20%	50V
C614	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C615	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C616	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C617	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C618	1-126-957-11	ELECT	0.22uF	20%	50V
C619	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C620	1-126-962-11	ELECT	3.3uF	20%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C621	1-126-962-11	ELECT	3.3uF	20%	50V
C622	1-104-664-11	ELECT	47uF	20%	16V
C623	1-126-964-11	ELECT	10uF	20%	50V
C624	1-126-960-11	ELECT	1uF	20%	50V
C625	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C626	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C628	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C629	1-126-965-11	ELECT	22uF	20%	50V
C630	1-126-964-11	ELECT	10uF	20%	50V
C631	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C632	1-126-933-11	ELECT	100uF	20%	16V
C633	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C634	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C635	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C636	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C637	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C641	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C644	1-163-087-00	CERAMIC CHIP	4PF		50V
C645	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C651	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C652	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C653	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C655	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C656	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C657	1-104-664-11	ELECT	47uF	20%	16V
C658	1-126-961-11	ELECT	2.2uF	20%	50V
C659	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C660	1-104-664-11	ELECT	47uF	20%	16V
C661	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C662	1-126-959-11	ELECT	0.47uF	20%	50V
C663	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C669	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C803	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C821	1-104-665-11	ELECT	100uF	20%	10V
C822	1-126-961-11	ELECT	2.2uF	20%	50V
C824	1-126-960-11	ELECT	1uF	20%	50V
C841	1-126-959-11	ELECT	0.47uF	20%	50V
C853	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C861	1-107-717-11	ELECT	47uF	20%	50V
C862	1-107-721-11	ELECT	4.7uF	20%	100V
C863	1-107-721-11	ELECT	4.7uF	20%	100V
C891	1-126-964-11	ELECT	10uF	20%	50V
C892	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C901	1-111-235-61	ELECT	10000uF	20%	25V
C902	1-136-165-00	MYLAR	0.1uF	5%	50V
C903	1-136-165-00	MYLAR	0.1uF	5%	50V
C905	1-136-165-00	MYLAR	0.1uF	5%	50V
C906	1-136-165-00	MYLAR	0.1uF	5%	50V
C907	1-128-548-11	ELECT	4700uF	20%	25V
C908	1-126-942-61	ELECT	1000uF	20%	25V
C909	1-126-952-11	ELECT	1000uF	20%	35V
C911	1-126-960-11	ELECT	1uF	20%	50V
C912	1-126-917-11	ELECT	3300uF	20%	6.3V
C921	1-126-960-11	ELECT	1uF	20%	50V
C922	1-126-933-11	ELECT	100uF	20%	16V
C925	1-104-665-11	ELECT	100uF	20%	10V
C931	1-126-964-11	ELECT	10uF	20%	50V
C932	1-126-925-11	ELECT	470uF	20%	10V

Ref. No.	Part No.	Description			Remark
C951	1-126-960-11	ELECT	1uF	20%	50V
C961	1-126-960-11	ELECT	1uF	20%	50V
C962	1-126-926-11	ELECT	1000uF	20%	10V
		< CERAMIC FILTER >			
CF601	1-760-023-11	FILTER, CERAMIC			
CF602	1-760-023-11	FILTER, CERAMIC			
		< CONNECTOR >			
* CN101	1-565-291-11	SOCKET, CONNECTOR 13P			(SYSTEM CONTROL)
CN201	1-565-937-11	SOCKET, CONNECTOR 13P			
CN202	1-785-336-11	PIN, CONNECTOR (LIGHT ANGLE) 10P			
* CN301	1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P			
* CN304	1-569-934-11	SOCKET, CONNECTOR 17P			
CN401	1-793-766-11	CONNECTOR, BOARD TO BOARD 30P			
* CN891	1-564-506-11	PLUG, CONNECTOR 3P			
CN901	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P			
CN902	1-778-982-21	CONNECTOR, BOARD TO BOARD 13P			
		< DIODE >			
D501	8-719-988-61	DIODE	1SS355TE-17		
D502	8-719-988-61	DIODE	1SS355TE-17		
D503	8-719-988-61	DIODE	1SS355TE-17		
D504	8-719-988-61	DIODE	1SS355TE-17		
D505	8-719-988-61	DIODE	1SS355TE-17		
D506	8-719-988-61	DIODE	1SS355TE-17		
D507	8-719-988-61	DIODE	1SS355TE-17		
D508	8-719-988-61	DIODE	1SS355TE-17		
D511	8-719-988-61	DIODE	1SS355TE-17		
D601	8-719-056-83	DIODE	UDZ-TE-17-6.8B		
D641	8-719-914-42	DIODE	DA204K-T-146		
D651	8-719-988-61	DIODE	1SS355TE-17		
D801	8-719-988-61	DIODE	1SS355TE-17		
D822	8-719-988-61	DIODE	1SS355TE-17		
D824	8-719-988-61	DIODE	1SS355TE-17		
D841	8-719-988-61	DIODE	1SS355TE-17		
D861	8-719-988-61	DIODE	1SS355TE-17		
D891	8-719-988-61	DIODE	1SS355TE-17		
D892	8-719-988-61	DIODE	1SS355TE-17		
D901	8-719-210-21	DIODE	11EQS04-TA1B		
D902	8-719-210-21	DIODE	11EQS04-TA1B		
D903	8-719-210-21	DIODE	11EQS04-TA1B		
D904	8-719-210-21	DIODE	11EQS04-TA1B		
D906	8-719-200-82	DIODE	11ES2-TB5		
D907	8-719-200-82	DIODE	11ES2-TB5		
D908	8-719-200-82	DIODE	11ES2-TB5		
D909	8-719-200-82	DIODE	11ES2-TB5		
D910	8-719-200-82	DIODE	11ES2-TB5		
D911	8-719-200-82	DIODE	11ES2-TB5		
D952	8-719-988-61	DIODE	1SS355TE-17		
D953	8-719-988-61	DIODE	1SS355TE-17		
		< SHORT >			
FB201	1-216-295-00	SHORT	0		
FB202	1-216-295-00	SHORT	0		
FB203	1-216-295-00	SHORT	0		

Ref. No.	Part No.	Description		Remark
FB204	1-216-295-00	SHORT	0	
FB416	1-216-295-00	SHORT	0	
FB462	1-216-295-00	SHORT	0	
FB499	1-216-295-00	SHORT	0	
		< FRONT END >		
FE602	1-693-478-11	FRONT END (FM3 GANGS)		
		< IC >		
IC101	8-759-652-04	IC	M61504FP-TP	
IC102	8-759-099-06	IC	M5218AFP-TE1	
IC103	8-759-652-01	IC	LA2615	
IC104	8-759-099-06	IC	M5218AFP-TE1	
IC201	8-749-923-04	IC	TOTX178A (OPTICAL)	
IC301	8-759-652-02	IC	HA12226F	
IC302	8-759-143-54	IC	uPC1330HA	
IC303	8-759-656-83	IC	NJM4580MD-TE	
IC304	8-759-656-83	IC	NJM4580MD-TE	
IC401	8-759-677-43	IC	M30622MAA-A60	
IC501	8-759-635-63	IC	M51943BSL-TP	
IC601	8-759-652-00	IC	BA1450	
IC651	8-759-288-54	IC	LC72130	
IC911	8-759-039-69	IC	uPC7805AHF	
IC921	8-759-088-08	IC	uPC7812AHF	
IC931	8-759-071-48	IC	TA7807S	
IC951	8-759-158-62	IC	TA78057S	
IC961	8-759-701-59	IC	M5F7809L	
		< IF TRANSFORMER >		
IFT601	1-435-295-11	TRANSFORMER, IF		
		< JACK >		
J101	1-793-987-11	JACK, PIN 2P (MD/VIDEO (AUDIO))		
		< SHORT >		
JR1	1-216-296-00	SHORT	0	
JR2	1-216-296-00	SHORT	0	
JR3	1-216-296-00	SHORT	0	
JR4	1-216-296-00	SHORT	0	
JR6	1-216-296-00	SHORT	0	
JR7	1-216-296-00	SHORT	0	
JR8	1-216-295-00	SHORT	0	
JR13	1-216-296-00	SHORT	0	
JR14	1-216-296-00	SHORT	0	
JR15	1-216-296-00	SHORT	0	
JR17	1-216-296-00	SHORT	0	
JR18	1-216-295-00	SHORT	0	
JR19	1-216-296-00	SHORT	0	
JR23	1-216-296-00	SHORT	0	
JR25	1-216-296-00	SHORT	0	
JR26	1-216-296-00	SHORT	0	
JR27	1-216-296-00	SHORT	0	
JR29	1-216-296-00	SHORT	0	
JR31	1-216-295-00	SHORT	0	
JR32	1-216-296-00	SHORT	0	
JR33	1-216-296-00	SHORT	0	
JR34	1-216-295-00	SHORT	0	
JR35	1-216-296-00	SHORT	0 (IA)	
JR36	1-216-295-00	SHORT	0	
JR37	1-216-296-00	SHORT	0	
JR38	1-216-296-00	SHORT	0	
JR39	1-216-296-00	SHORT	0 (IA)	
JR40	1-216-295-00	SHORT	0 (IA)	
JR42	1-216-295-00	SHORT	0	
JR44	1-216-296-00	SHORT	0	
JR45	1-216-296-00	SHORT	0 (IA)	
JR51	1-216-296-00	SHORT	0	
JR52	1-216-296-00	SHORT	0	
JR53	1-216-296-00	SHORT	0 (IA)	
JR54	1-216-295-00	SHORT	0	
JR140	1-216-296-00	SHORT	0	
JR205	1-216-295-00	SHORT	0 (E, MY, SP, IA)	
JR431	1-216-295-00	SHORT	0	
JR433	1-216-295-00	SHORT	0 (E, EA, MY, SP)	
JR434	1-216-295-00	SHORT	0 (IA)	
JR602	1-216-295-00	SHORT	0	
JR603	1-216-296-00	SHORT	0	
JR604	1-216-296-00	SHORT	0	
JR605	1-216-296-00	SHORT	0	
JR606	1-216-296-00	SHORT	0	
JR607	1-216-295-00	SHORT	0	
JR608	1-216-296-00	SHORT	0	
JR611	1-216-296-00	SHORT	0	
JR612	1-216-295-00	SHORT	0	
JR615	1-216-295-00	SHORT	0	
JR616	1-216-295-00	SHORT	0	
JR619	1-216-295-00	SHORT	0	
JR632	1-216-295-00	SHORT	0	
JR634	1-216-295-00	SHORT	0	
JR640	1-216-295-00	SHORT	0	
JR920	1-216-295-00	SHORT	0 (EA)	
JR922	1-216-295-00	SHORT	0	
JR923	1-216-295-00	SHORT	0	
JR924	1-216-295-00	SHORT	0	
JR926	1-216-295-00	SHORT	0 (EA)	
JR927	1-216-295-00	SHORT	0	
JR928	1-216-295-00	SHORT	0 (E, MY, SP, IA)	
		< COIL/SHORT >		
L201	1-414-189-31	INDUCTOR	100uH	
L301	1-410-780-11	INDUCTOR	27mH	
L302	1-414-193-41	INDUCTOR	220uH	
L303	1-414-193-41	INDUCTOR	220uH	
L351	1-410-780-11	INDUCTOR	27mH	
L642	1-216-296-00	SHORT	0	
		< LOW-PASS FILTER >		
LPF601	1-234-458-11	FILTER, LOW PASS		
LPF602	1-234-458-11	FILTER, LOW PASS		
		< TRANSISTOR >		
Q101	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q102	8-729-144-85	FET	2SK1133-T1B	

MAIN

Ref. No.	Part No.	Description		Remark
Q103	8-729-107-45	TRANSISTOR	2SC3624A-T1L15L16	
Q141	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q151	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q152	8-729-144-85	FET	2SK1133-T1B	
Q153	8-729-107-45	TRANSISTOR	2SC3624A-T1L15L16	
Q301	8-729-801-93	TRANSISTOR	2SD1387-34-TP	
Q302	8-729-142-46	TRANSISTOR	2SC2001TP-LK	
Q303	8-729-142-46	TRANSISTOR	2SC2001TP-LK	
Q304	8-729-113-69	TRANSISTOR	FN1F4M-T1M32	
Q305	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	
Q391	8-729-140-04	TRANSISTOR	2SB1116-TP-LK	
Q392	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	
Q393	8-729-140-04	TRANSISTOR	2SB1116-TP-LK	
Q394	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	
Q395	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	
Q396	8-729-116-57	TRANSISTOR	2SB1068TP-K	
Q397	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	
Q501	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q503	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	
Q504	8-729-113-69	TRANSISTOR	FN1F4M-T1M32	
Q505	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	
Q601	8-729-201-27	TRANSISTOR	2SC2715Y-TE85L	
Q602	8-729-422-57	TRANSISTOR	BN1A4M-TP	
Q611	8-729-120-28	TRANSISTOR	2SC2412K-T-146-QR	
Q612	8-729-120-28	TRANSISTOR	2SC2412K-T-146-QR	
Q821	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q822	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q823	8-729-216-22	TRANSISTOR	2SA812-T1-M5M6	
Q824	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	
Q825	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q828	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q829	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q831	8-729-113-69	TRANSISTOR	FN1F4M-T1M32	
Q832	8-729-120-28	TRANSISTOR	2SC1623-T1-L5L6	
Q861	8-729-113-69	TRANSISTOR	FN1F4M-T1M32	
Q862	8-729-107-45	TRANSISTOR	2SC3624A-T1L15L16	
Q863	8-729-107-45	TRANSISTOR	2SC3624A-T1L15L16	
Q891	8-729-140-04	TRANSISTOR	2SB1116-TP-LK	
Q892	8-729-620-05	TRANSISTOR	2SC2603TP-EF	
Q911	8-729-141-83	TRANSISTOR	2SB1375	
Q912	8-729-113-13	TRANSISTOR	FA1A4M-T1L33	

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R101	1-216-049-11	RES-CHIP	1K	5%	1/10W
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-097-00	RES-CHIP	100K	5%	1/10W
R107	1-216-105-00	RES-CHIP	220K	5%	1/10W
R108	1-216-097-00	RES-CHIP	100K	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-045-00	METAL CHIP	680	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-089-00	RES-CHIP	47K	5%	1/10W
R113	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R114	1-216-097-00	RES-CHIP	100K	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W
R116	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R121	1-216-224-91	RES-CHIP	12K	5%	1/8W
R122	1-216-073-00	METAL CHIP	10K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R125	1-216-073-00	METAL CHIP	10K	5%	1/10W
R132	1-216-049-11	RES-CHIP	1K	5%	1/10W
R133	1-216-049-11	RES-CHIP	1K	5%	1/10W
R134	1-216-049-11	RES-CHIP	1K	5%	1/10W
R141	1-216-049-11	RES-CHIP	1K	5%	1/10W
R142	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R143	1-216-089-00	RES-CHIP	47K	5%	1/10W
R144	1-216-295-00	SHORT	0		
R145	1-216-041-00	METAL CHIP	470	5%	1/10W
R146	1-216-041-00	METAL CHIP	470	5%	1/10W
R147	1-216-041-00	METAL CHIP	470	5%	1/10W
R151	1-216-049-11	RES-CHIP	1K	5%	1/10W
R153	1-216-073-00	METAL CHIP	10K	5%	1/10W
R154	1-216-073-00	METAL CHIP	10K	5%	1/10W
R155	1-216-097-00	RES-CHIP	100K	5%	1/10W
R157	1-216-105-00	RES-CHIP	220K	5%	1/10W
R158	1-216-097-00	RES-CHIP	100K	5%	1/10W
R159	1-216-073-00	METAL CHIP	10K	5%	1/10W
R160	1-216-045-00	METAL CHIP	680	5%	1/10W
R161	1-216-222-00	RES-CHIP	10K	5%	1/8W
R162	1-216-089-00	RES-CHIP	47K	5%	1/10W
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R164	1-216-097-00	RES-CHIP	100K	5%	1/10W
R165	1-216-073-00	METAL CHIP	10K	5%	1/10W
R166	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R171	1-216-075-00	METAL CHIP	12K	5%	1/10W
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W
R173	1-216-073-00	METAL CHIP	10K	5%	1/10W
R175	1-216-073-00	METAL CHIP	10K	5%	1/10W
R181	1-216-085-11	RES-CHIP	33K	5%	1/10W
R182	1-216-049-11	RES-CHIP	1K	5%	1/10W
R201	1-216-025-00	RES-CHIP	100	5%	1/10W
R202	1-216-085-00	METAL CHIP	33K	5%	1/10W
R203	1-216-025-00	RES-CHIP	100	5%	1/10W
R204	1-216-085-00	METAL CHIP	33K	5%	1/10W
R205	1-216-073-00	METAL CHIP	10K	5%	1/10W
R301	1-216-085-00	METAL CHIP	33K	5%	1/10W
R302	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R303	1-216-025-00	RES-CHIP	100	5%	1/10W
R304	1-216-025-00	RES-CHIP	100	5%	1/10W
R305	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R306	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R307	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R308	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R309	1-216-081-00	METAL CHIP	22K	5%	1/10W
R311	1-216-121-00	RES-CHIP	1M	5%	1/10W
R312	1-216-102-00	RES-CHIP	160K	5%	1/10W
R313	1-216-097-00	RES-CHIP	100K	5%	1/10W
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W
R316	1-216-234-00	RES-CHIP	33K	5%	1/8W
R317	1-216-222-00	RES-CHIP	10K	5%	1/8W
R318	1-216-073-00	METAL CHIP	10K	5%	1/10W
R319	1-216-111-00	METAL CHIP	390K	5%	1/10W
R320	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R321	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R331	1-216-099-00	METAL CHIP	120K	5%	1/10W
R332	1-216-025-00	RES-CHIP	100	5%	1/10W
R333	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R334	1-216-100-00	RES-CHIP	130K	5%	1/10W
R335	1-216-033-00	METAL CHIP	220	5%	1/10W
R336	1-216-099-00	METAL CHIP	120K	5%	1/10W
R337	1-216-033-00	METAL CHIP	220	5%	1/10W
R338	1-216-081-00	METAL CHIP	22K	5%	1/10W
R339	1-216-075-00	METAL CHIP	12K	5%	1/10W
R340	1-216-107-00	METAL CHIP	270K	5%	1/10W
R341	1-216-033-00	METAL CHIP	220	5%	1/10W
R342	1-216-075-00	METAL CHIP	12K	5%	1/10W
⚠R343	1-219-787-17	FUSIBLE	5.6	5%	1/4W F
⚠R344	1-219-787-17	FUSIBLE	5.6	5%	1/4W F
R345	1-216-079-00	METAL CHIP	18K	5%	1/10W
R346	1-216-079-00	METAL CHIP	18K	5%	1/10W
R347	1-216-073-00	METAL CHIP	10K	5%	1/10W
R351	1-216-085-00	METAL CHIP	33K	5%	1/10W
R352	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R353	1-216-025-00	RES-CHIP	100	5%	1/10W
R354	1-216-025-00	RES-CHIP	100	5%	1/10W
R355	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R356	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R357	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R358	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R359	1-216-085-00	METAL CHIP	33K	5%	1/10W
R360	1-216-045-00	METAL CHIP	680	5%	1/10W
R361	1-216-049-11	RES-CHIP	1K	5%	1/10W
R363	1-216-049-11	RES-CHIP	1K	5%	1/10W
R364	1-216-045-00	METAL CHIP	680	5%	1/10W
R366	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R367	1-216-089-00	RES-CHIP	47K	5%	1/10W
R368	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R369	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R371	1-216-238-91	RES-CHIP	47K	5%	1/8W
R372	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R373	1-216-049-11	RES-CHIP	1K	5%	1/10W
R374	1-216-089-00	RES-CHIP	47K	5%	1/10W
R375	1-216-094-00	RES-CHIP	75K	5%	1/10W
R376	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R377	1-216-089-00	RES-CHIP	47K	5%	1/10W
R378	1-216-094-00	RES-CHIP	75K	5%	1/10W
R381	1-216-099-00	METAL CHIP	120K	5%	1/10W
R382	1-216-025-00	RES-CHIP	100	5%	1/10W
R383	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R384	1-216-100-00	RES-CHIP	130K	5%	1/10W
R385	1-216-296-00	SHORT	0		
R386	1-216-099-00	METAL CHIP	120K	5%	1/10W
R387	1-216-033-00	METAL CHIP	220	5%	1/10W
R388	1-216-081-00	METAL CHIP	22K	5%	1/10W
R389	1-216-075-00	METAL CHIP	12K	5%	1/10W
R390	1-216-107-00	METAL CHIP	270K	5%	1/10W
R391	1-216-296-00	SHORT	0		
R392	1-216-075-00	METAL CHIP	12K	5%	1/10W
R393	1-216-081-00	METAL CHIP	22K	5%	1/10W
R394	1-216-033-00	METAL CHIP	220	5%	1/10W

Ref. No.	Part No.	Description			Remark
R396	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R407	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R409	1-216-295-00	SHORT	0		
R411	1-216-109-00	METAL CHIP	330K	5%	1/10W
R413	1-216-295-00	SHORT	0		
R417	1-216-073-00	METAL CHIP	10K	5%	1/10W
R418	1-216-025-00	RES-CHIP	100	5%	1/10W
R420	1-216-073-00	METAL CHIP	10K	5%	1/10W
R421	1-216-025-00	RES-CHIP	100	5%	1/10W
R422	1-216-025-00	RES-CHIP	100	5%	1/10W
R429	1-216-025-00	RES-CHIP	100	5%	1/10W
R430	1-216-025-00	RES-CHIP	100	5%	1/10W
R431	1-216-089-00	RES-CHIP	47K	5%	1/10W
R434	1-216-089-00	RES-CHIP	47K	5%	1/10W
R443	1-216-025-00	RES-CHIP	100	5%	1/10W
R444	1-216-025-00	RES-CHIP	100	5%	1/10W
R445	1-216-025-00	RES-CHIP	100	5%	1/10W
R446	1-216-025-00	RES-CHIP	100	5%	1/10W
R447	1-216-025-00	RES-CHIP	100	5%	1/10W
R448	1-216-025-00	RES-CHIP	100	5%	1/10W
R449	1-216-025-00	RES-CHIP	100	5%	1/10W
R467	1-216-025-00	RES-CHIP	100	5%	1/10W
R468	1-216-025-00	RES-CHIP	100	5%	1/10W
R469	1-216-025-00	RES-CHIP	100	5%	1/10W
R483	1-216-073-00	METAL CHIP	10K	5%	1/10W
R484	1-216-073-00	METAL CHIP	10K	5%	1/10W
R490	1-216-174-00	RES-CHIP	100	5%	1/8W
R491	1-216-174-00	RES-CHIP	100	5%	1/8W
R493	1-216-174-00	RES-CHIP	100	5%	1/8W
R494	1-216-295-00	SHORT	0		
R495	1-216-089-00	RES-CHIP	47K	5%	1/10W
R496	1-216-077-00	RES-CHIP	15K	5%	1/10W
R497	1-216-053-00	METAL CHIP	1.5K	5%	1/10W (E, MY, SP, IA)
R497	1-216-073-00	METAL CHIP	10K	5%	1/10W (EA)
R498	1-216-089-00	RES-CHIP	47K	5%	1/10W
R499	1-216-025-00	RES-CHIP	100	5%	1/10W
R501	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-089-00	RES-CHIP	47K	5%	1/10W
R503	1-216-089-00	RES-CHIP	47K	5%	1/10W
R504	1-216-025-00	RES-CHIP	100	5%	1/10W
R505	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R506	1-216-041-00	METAL CHIP	470	5%	1/10W
R508	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R509	1-216-081-00	METAL CHIP	22K	5%	1/10W
R510	1-216-097-00	RES-CHIP	100K	5%	1/10W
R511	1-216-174-00	RES-CHIP	100	5%	1/8W
R523	1-216-073-00	METAL CHIP	10K	5%	1/10W
R524	1-216-073-00	METAL CHIP	10K	5%	1/10W
R546	1-216-073-00	METAL CHIP	10K	5%	1/10W
R547	1-216-073-00	METAL CHIP	10K	5%	1/10W
R548	1-216-073-00	METAL CHIP	10K	5%	1/10W
R566	1-216-073-00	METAL CHIP	10K	5%	1/10W
R602	1-216-029-00	METAL CHIP	150	5%	1/10W
R603	1-216-045-00	METAL CHIP	680	5%	1/10W
R604	1-216-017-00	RES-CHIP	47	5%	1/10W
R605	1-216-045-00	METAL CHIP	680	5%	1/10W
R606	1-216-037-00	METAL CHIP	330	5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN | MOTOR

Ref. No.	Part No.	Description			Remark
R607	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R608	1-216-017-00	RES-CHIP	47	5%	1/10W
R609	1-216-295-00	SHORT	0		
R610	1-216-045-00	METAL CHIP	680	5%	1/10W
R611	1-216-182-00	RES-CHIP	220	5%	1/8W
R612	1-216-214-00	RES-CHIP	4.7K	5%	1/8W
R613	1-216-206-00	RES-CHIP	2.2K	5%	1/8W
R614	1-216-041-00	METAL CHIP	470	5%	1/10W
R615	1-216-049-11	RES-CHIP	1K	5%	1/10W
R616	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R617	1-216-041-00	METAL CHIP	470	5%	1/10W
R618	1-216-049-11	RES-CHIP	1K	5%	1/10W
R619	1-216-025-00	RES-CHIP	100	5%	1/10W
R620	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R621	1-216-075-00	METAL CHIP	12K	5%	1/10W
R622	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R623	1-216-073-00	METAL CHIP	10K	5%	1/10W
R624	1-216-073-00	METAL CHIP	10K	5%	1/10W
R625	1-216-073-00	METAL CHIP	10K	5%	1/10W
R641	1-216-097-00	RES-CHIP	100K	5%	1/10W
R642	1-216-073-00	METAL CHIP	10K	5%	1/10W
R655	1-216-073-00	METAL CHIP	10K	5%	1/10W
R656	1-216-222-00	RES-CHIP	10K	5%	1/8W
R658	1-216-174-00	RES-CHIP	100	5%	1/8W
R659	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R660	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R661	1-216-025-00	RES-CHIP	100	5%	1/10W
R662	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R663	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R664	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R665	1-216-025-00	RES-CHIP	100	5%	1/10W
R666	1-216-073-00	METAL CHIP	10K	5%	1/10W
R667	1-216-222-00	RES-CHIP	10K	5%	1/8W
R668	1-216-049-11	RES-CHIP	1K	5%	1/10W
R669	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R804	1-216-089-00	RES-CHIP	47K	5%	1/10W
R820	1-216-049-11	RES-CHIP	1K	5%	1/10W
R821	1-216-238-91	RES-CHIP	47K	5%	1/8W
R822	1-216-240-00	RES-CHIP	56K	5%	1/8W
R823	1-216-222-00	RES-CHIP	10K	5%	1/8W
R824	1-216-089-00	METAL CHIP	47K	5%	1/10W
R825	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R826	1-216-085-00	METAL CHIP	33K	5%	1/10W
R827	1-216-081-00	METAL CHIP	22K	5%	1/10W
R829	1-216-230-00	RES-CHIP	22K	5%	1/8W
R830	1-216-214-00	RES-CHIP	4.7K	5%	1/8W
R831	1-216-214-00	RES-CHIP	4.7K	5%	1/8W
R832	1-216-097-00	RES-CHIP	100k	5%	1/10W
R841	1-216-081-00	METAL CHIP	22K	5%	1/10W
R842	1-216-081-00	METAL CHIP	22K	5%	1/10W
R843	1-216-214-00	RES-CHIP	4.7K	5%	1/8W
R844	1-216-097-00	RES-CHIP	100K	5%	1/10W
R845	1-216-121-00	RES-CHIP	1M	5%	1/10W
R854	1-216-089-00	RES-CHIP	47K	5%	1/10W
R861	1-216-049-11	RES-CHIP	1K	5%	1/10W
R862	1-216-073-00	METAL CHIP	10K	5%	1/10W
R863	1-216-089-00	RES-CHIP	47K	5%	1/10W
R864	1-216-049-11	RES-CHIP	1K	5%	1/10W
R865	1-216-049-11	RES-CHIP	1K	5%	1/10W
R866	1-216-019-00	METAL CHIP	56	5%	1/10W
⚠R868	1-215-891-11	METAL OXIDE	680	5%	2W F
⚠R869	1-215-891-11	METAL OXIDE	680	5%	2W F
R891	1-216-222-00	RES-CHIP	10K	5%	1/8W
R892	1-216-065-00	RES-CHIP	4.7K	5%	1/10W
R893	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R901	1-249-405-11	CARBON	100	5%	1/4W
R911	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R912	1-216-206-00	RES-CHIP	2.2K	5%	1/8W
R914	1-216-206-00	RES-CHIP	2.2K	5%	1/8W
⚠R915	1-219-591-11	FUSIBLE	0.1	5%	1/2W F
⚠R916	1-219-119-11	FUSIBLE	0.1	5%	1/4W F
R966	1-216-019-00	METAL CHIP	56	5%	1/10W
		< ENCAPSULATED COMPONENT >			
RB641	1-234-457-11	ENCAPSULATED COMPONENT (AM FRONT-END)			
		< VARIABLE RESISTOR >			
RV301	1-241-764-11	RES, ADJ, CARBON 10K			
RV302	1-241-762-11	RES, ADJ, CARBON 2.2K			
RV303	1-241-762-11	RES, ADJ, CARBON 2.2K			
RV304	1-241-768-11	RES, ADJ, CARBON 220K			
RV351	1-241-764-11	RES, ADJ, CARBON 10K			
RV352	1-241-762-11	RES, ADJ, CARBON 2.2K			
RV353	1-241-762-11	RES, ADJ, CARBON 2.2K			
RV354	1-241-768-11	RES, ADJ, CARBON 220K			
RV611	1-241-765-11	RES, ADJ, CARBON 22K			
		< RELAY >			
RY801	1-755-372-11	RELAY			
		< TRANSFORMER >			
T301	1-423-980-11	TRANSFORMER, BIAS OSCILLATION			
T601	1-435-195-11	TRANSFORMER, DISCRIMINATOR			
		< TERMINAL >			
TM601	1-694-555-11	TERMINAL BOARD (4P) (ANTENNA)			
TM801	1-694-635-11	TERMINAL BOARD (4P) (SPEAKER, IMPEDANCE USE 6-16Ω)			
		< VIBRATOR >			
X401	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			
X402	1-781-107-21	VIBRATOR, CERAMIC (16MHz)			
X651	1-760-549-31	VIBRATOR, CRYSTAL (4.5MHz)			
**********					
	1-675-910-11	MOTOR BOARD **********			
		< CAPACITOR >			
C721	1-162-306-11	CERAMIC	0.01uF	30%	16V
		< CONNECTOR >			
CN721	1-770-516-31	CONNECTOR, FFC 8P			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
CN722	1-785-330-11	PIN, CONNECTOR (LIGHT ANGLE) 4P			
		< SWITCH >			
S701	1-771-822-11	SWITCH, LEVER (SLIDE) (OPEN/CLOSE)			
**********					
	A-4473-076-A	PANEL BOARD, COMPLETE (E, EA, MY, SP)			
	A-4473-525-A	PANEL BOARD, COMPLETE (IA)			
		**********			
	4-224-584-01	HOLDER (FL)			
		< CAPACITOR >			
C601	1-124-589-11	ELECT	47uF	20%	16V
C602	1-126-163-11	ELECT	4.7uF	20%	50V
C603	1-162-306-11	CERAMIC	0.01uF	30%	16V
C604	1-162-294-31	CERAMIC	0.001uF	10%	50V
C605	1-162-306-11	CERAMIC	0.01uF	30%	16V
C606	1-162-294-31	CERAMIC	0.001uF	10%	50V
C607	1-104-664-11	ELECT	47uF	20%	10V
C608	1-162-306-11	CERAMIC	0.01uF	30%	16V
C609	1-162-306-11	CERAMIC	0.01uF	30%	16V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-126-157-11	ELECT	10uF	20%	16V
C612	1-162-303-11	CERAMIC	0.0033uF	30%	16V
C613	1-126-157-11	ELECT	10uF	20%	16V
C614	1-126-157-11	ELECT	10uF	20%	16V
C615	1-126-963-11	ELECT	4.7uF	20%	50V
C616	1-162-306-11	CERAMIC	0.01uF	30%	16V
C617	1-162-294-31	CERAMIC	0.001uF	10%	50V
C620	1-126-933-11	ELECT	100uF	20%	16V
C621	1-104-664-11	ELECT	47uF	20%	16V
C631	1-162-294-31	CERAMIC	0.001uF	10%	50V
C632	1-162-294-31	CERAMIC	0.001uF	10%	50V
C651	1-164-159-11	CERAMIC	0.1uF		50V
C652	1-126-960-11	ELECT	1uF	20%	50V
C653	1-126-960-11	ELECT	1uF	20%	50V
C654	1-164-159-11	CERAMIC	0.1uF		50V
C655	1-162-282-31	CERAMIC	100PF	10%	50V
C656	1-162-282-31	CERAMIC	100PF	10%	50V
C657	1-162-282-31	CERAMIC	100PF	10%	50V
C658	1-162-282-31	CERAMIC	100PF	10%	50V
C659	1-162-282-31	CERAMIC	100PF	10%	50V
C660	1-162-282-31	CERAMIC	100PF	10%	50V
C661	1-162-282-31	CERAMIC	100PF	10%	50V
C662	1-162-282-31	CERAMIC	100PF	10%	50V
C663	1-162-282-31	CERAMIC	100PF	10%	50V
C664	1-162-282-31	CERAMIC	100PF	10%	50V
C665	1-162-282-31	CERAMIC	100PF	10%	50V
C666	1-162-282-31	CERAMIC	100PF	10%	50V
C667	1-162-282-31	CERAMIC	100PF	10%	50V
C668	1-162-282-31	CERAMIC	100PF	10%	50V
C669	1-162-282-31	CERAMIC	100PF	10%	50V
C670	1-162-282-31	CERAMIC	100PF	10%	50V
C671	1-162-282-31	CERAMIC	100PF	10%	50V
C717	1-126-157-11	ELECT	10uF	20%	16V
C718	1-126-157-11	ELECT	10uF	20%	16V
C719	1-126-961-11	ELECT	2.2uF	20%	50V

Ref. No.	Part No.	Description			Remark
C720	1-164-159-11	CERAMIC	0.1uF		50V
C721	1-162-294-31	CERAMIC	0.001uF	10%	50V
C722	1-162-305-11	CERAMIC	0.0068uF	30%	16V
C723	1-126-960-11	ELECT	1uF	20%	50V
C724	1-136-495-11	MYLAR	0.068uF	5%	50V
C725	1-126-959-11	ELECT	0.47uF	20%	50V
C726	1-124-465-00	ELECT	0.47uF	20%	50V
C727	1-136-167-00	MYLAR	0.15uF	5%	50V
C728	1-162-294-31	CERAMIC	0.001uF	10%	50V
C729	1-126-960-11	ELECT	1uF	20%	50V
C730	1-161-494-00	CERAMIC	0.022uF		25V
C731	1-162-305-11	CERAMIC	0.0068uF	30%	16V
C732	1-136-495-11	MYLAR	0.068uF	5%	50V
C733	1-104-664-11	ELECT	47uF	20%	10V
C734	1-124-589-11	ELECT	47uF	20%	16V
C735	1-124-257-00	ELECT	2.2uF	20%	50V
C736	1-126-964-11	ELECT	10uF	20%	50V
C737	1-126-964-11	ELECT	10uF	20%	50V
C738	1-126-961-11	ELECT	2.2uF	20%	50V
C739	1-162-215-31	CERAMIC	47PF	5%	50V
C740	1-162-282-31	CERAMIC	100PF	10%	50V
C741	1-124-463-00	ELECT	0.1uF	20%	50V
C742	1-162-215-31	CERAMIC	47PF	5%	50V
C743	1-162-290-31	CERAMIC	470PF	10%	50V
C744	1-162-294-31	CERAMIC	0.001uF	10%	50V
C745	1-126-961-11	ELECT	2.2uF	20%	50V
C746	1-162-306-11	CERAMIC	0.01uF	30%	16V
C747	1-126-961-11	ELECT	2.2uF	20%	50V
C748	1-162-306-11	CERAMIC	0.01uF	30%	16V
C749	1-162-306-11	CERAMIC	0.01uF	30%	16V
C750	1-162-282-31	CERAMIC	100PF	10%	50V
C751	1-162-282-31	CERAMIC	100PF	10%	50V
C752	1-162-282-31	CERAMIC	100PF	10%	50V
C753	1-162-282-31	CERAMIC	100PF	10%	50V
C754	1-162-282-31	CERAMIC	100PF	10%	50V
C755	1-162-282-31	CERAMIC	100PF	10%	50V
C756	1-162-282-31	CERAMIC	100PF	10%	50V
C757	1-162-282-31	CERAMIC	100PF	10%	50V
C758	1-162-282-31	CERAMIC	100PF	10%	50V
C759	1-162-282-31	CERAMIC	100PF	10%	50V
C760	1-162-282-31	CERAMIC	100PF	10%	50V
C761	1-162-282-31	CERAMIC	100PF	10%	50V
C762	1-162-282-31	CERAMIC	100PF	10%	50V
C763	1-162-282-31	CERAMIC	100PF	10%	50V
C764	1-162-282-31	CERAMIC	100PF	10%	50V
C765	1-162-282-31	CERAMIC	100PF	10%	50V
C766	1-162-282-31	CERAMIC	100PF	10%	50V
C767	1-162-282-31	CERAMIC	100PF	10%	50V
C768	1-162-282-31	CERAMIC	100PF	10%	50V
C769	1-162-282-31	CERAMIC	100PF	10%	50V
C770	1-162-282-31	CERAMIC	100PF	10%	50V
C771	1-162-282-31	CERAMIC	100PF	10%	50V
C772	1-162-282-31	CERAMIC	100PF	10%	50V
C773	1-162-282-31	CERAMIC	100PF	10%	50V
C774	1-162-282-31	CERAMIC	100PF	10%	50V
C775	1-162-282-31	CERAMIC	100PF	10%	50V
C776	1-162-282-31	CERAMIC	100PF	10%	50V
C777	1-162-282-31	CERAMIC	100PF	10%	50V

PANEL

Ref. No.	Part No.	Description			Remark
C778	1-162-282-31	CERAMIC	100PF	10%	50V
C779	1-162-282-31	CERAMIC	100PF	10%	50V
C780	1-162-282-31	CERAMIC	100PF	10%	50V
C781	1-162-282-31	CERAMIC	100PF	10%	50V
C782	1-162-282-31	CERAMIC	100PF	10%	50V
C783	1-162-282-31	CERAMIC	100PF	10%	50V
C784	1-162-282-31	CERAMIC	100PF	10%	50V
		< CONNECTOR >			
CN601	1-793-767-11	CONNECTOR, BOARD TO BOARD 30P			
		< DIODE >			
D601	8-719-057-30	LED HLMF-K205-2UL (I/⏻)			
D602	8-719-063-93	LED SLR325VC-N-T32 (TIMER)			
D603	8-719-921-48	DIODE MTZJ-T-72-5.6C			
D605	8-719-109-85	DIODE MTZJ-T-72-5.1B			
D611	8-719-071-41	LED SELS5923C-TP15 (GROOVE)			
D612	8-719-071-41	LED SELS5923C-TP15 (CURSOL)			
D613	8-719-071-41	LED SELS5923C-TP15 (CURSOL)			
D614	8-719-071-41	LED SELS5923C-TP15 (V-GROOVE)			
D615	8-719-072-82	LED SELU5E20C-STP15 (FUNCTION)			
D617	8-719-063-93	LED SLR325VC-N-T32 (REC PAUSE/START)			
D618	8-719-071-41	LED SELS5923C-TP15 (SURROUND)			
		< INDUCTOR >			
FB601	1-412-473-21	INDUCTOR	0uH		
FB602	1-412-473-21	INDUCTOR	0uH		
FB603	1-412-473-21	INDUCTOR	0uH		
		< FLUORESCENT INDICATOR TUBE >			
FL601	1-517-928-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC601	8-759-652-49	IC TMP88CP77F-1A22			
IC602	8-759-570-21	IC BA3830F-E2			
IC603	8-759-648-23	IC RPM6940-H4			
IC721	8-759-496-40	IC M65850FP			
IC722	8-759-634-51	IC M5218AP			
		< JACK >			
J631	1-785-569-11	JACK (SMALL TYPE) (PHONES)			
J721	1-785-569-11	JACK (SMALL TYPE) (MIC1)			
J722	1-785-569-11	JACK (SMALL TYPE) (MIC2)			
		< COIL >			
L601	1-410-509-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q604	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q605	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q606	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q607	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q608	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q609	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q610	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q611	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q612	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q613	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q614	8-729-900-74	TRANSISTOR	BA1L3Z-TP		
Q615	8-729-111-29	TRANSISTOR	2SD1616A-TP-LK		
Q621	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q622	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q623	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q624	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q625	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q626	8-729-900-80	TRANSISTOR	BA1A4M-TP		
Q721	8-729-119-79	TRANSISTOR	2SC2785TP-FEK		
		< RESISTOR >			
R603	1-249-429-11	CARBON	10K	5%	1/4W
R604	1-247-807-31	CARBON	100	5%	1/4W
R605	1-247-903-00	CARBON	1M	5%	1/4W
R606	1-247-807-31	CARBON	100	5%	1/4W
R607	1-249-429-11	CARBON	10K	5%	1/4W
R608	1-247-807-31	CARBON	100	5%	1/4W
R609	1-249-429-11	CARBON	10K	5%	1/4W
R610	1-247-807-31	CARBON	100	5%	1/4W
R611	1-249-429-11	CARBON	10K	5%	1/4W
R612	1-249-401-11	CARBON	47	5%	1/4W
R613	1-247-893-11	CARBON	390K	5%	1/4W
R614	1-247-893-11	CARBON	390K	5%	1/4W
R615	1-249-441-11	CARBON	100K	5%	1/4W
R616	1-249-440-11	CARBON	82K	5%	1/4W
R617	1-249-429-11	CARBON	10K	5%	1/4W
R618	1-249-441-11	CARBON	100K	5%	1/4W
R619	1-249-441-11	CARBON	100K	5%	1/4W
R620	1-249-437-11	CARBON	47K	5%	1/4W
R621	1-249-440-11	CARBON	82K	5%	1/4W
R622	1-249-429-11	CARBON	10K	5%	1/4W
R623	1-249-431-11	CARBON	15K	5%	1/4W
R625	1-249-435-11	CARBON	33K	5%	1/4W
R626	1-247-895-00	CARBON	470K	5%	1/4W
R632	1-249-429-11	CARBON	10K	5%	1/4W
R633	1-249-411-11	CARBON	330	5%	1/4W
R634	1-249-407-11	CARBON	150	5%	1/4W
R635	1-249-401-11	CARBON	47	5%	1/4W
R636	1-249-441-11	CARBON	100K	5%	1/4W
R637	1-249-441-11	CARBON	100K	5%	1/4W
R638	1-249-441-11	CARBON	100K	5%	1/4W
R639	1-249-441-11	CARBON	100K	5%	1/4W
R640	1-249-441-11	CARBON	100K	5%	1/4W
R641	1-249-441-11	CARBON	100K	5%	1/4W
R642	1-249-441-11	CARBON	100K	5%	1/4W
R643	1-249-441-11	CARBON	100K	5%	1/4W
R644	1-249-441-11	CARBON	100K	5%	1/4W
R651	1-249-429-11	CARBON	10K	5%	1/4W
R652	1-249-410-11	CARBON	270	5%	1/4W
R653	1-249-411-11	CARBON	330	5%	1/4W
R654	1-249-413-11	CARBON	470	5%	1/4W
R655	1-249-415-11	CARBON	680	5%	1/4W
R656	1-249-417-11	CARBON	1K	5%	1/4W
R657	1-249-418-11	CARBON	1.2K	5%	1/4W
R658	1-249-418-11	CARBON	1.2K	5%	1/4W
R659	1-249-417-11	CARBON	1K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R660	1-249-420-11	CARBON	1.8K	5%	1/4W
R661	1-247-843-11	CARBON	3.3K	5%	1/4W
R662	1-249-425-11	CARBON	4.7K	5%	1/4W
R663	1-249-427-11	CARBON	6.8K	5%	1/4W
R664	1-249-429-11	CARBON	10K	5%	1/4W
R665	1-249-410-11	CARBON	270	5%	1/4W
R666	1-249-411-11	CARBON	330	5%	1/4W
R667	1-249-413-11	CARBON	470	5%	1/4W
R668	1-249-414-11	CARBON	560	5%	1/4W
R669	1-249-414-11	CARBON	560	5%	1/4W
R670	1-249-415-11	CARBON	680	5%	1/4W
R671	1-249-422-11	CARBON	2.7K	5%	1/4W
R672	1-249-420-11	CARBON	1.8K	5%	1/4W
R673	1-249-422-11	CARBON	2.7K	5%	1/4W
R674	1-247-843-11	CARBON	3.3K	5%	1/4W
R675	1-249-425-11	CARBON	4.7K	5%	1/4W
R676	1-249-427-11	CARBON	6.8K	5%	1/4W
R677	1-249-429-11	CARBON	10K	5%	1/4W
R678	1-249-432-11	CARBON	18K	5%	1/4W
R679	1-249-429-11	CARBON	10K	5%	1/4W
R680	1-249-410-11	CARBON	270	5%	1/4W
R681	1-249-411-11	CARBON	330	5%	1/4W
R682	1-249-413-11	CARBON	470	5%	1/4W
R683	1-249-414-11	CARBON	560	5%	1/4W
R684	1-249-415-11	CARBON	680	5%	1/4W
R693	1-249-429-11	CARBON	10K	5%	1/4W
R694	1-249-429-11	CARBON	10K	5%	1/4W
R695	1-249-429-11	CARBON	10K	5%	1/4W
R696	1-249-429-11	CARBON	10K	5%	1/4W
R701	1-249-410-11	CARBON	270	5%	1/4W
R702	1-249-408-11	CARBON	180	5%	1/4W
R703	1-249-410-11	CARBON	270	5%	1/4W
R704	1-249-411-11	CARBON	330	5%	1/4W
R705	1-249-410-11	CARBON	270	5%	1/4W
R706	1-249-410-11	CARBON	270	5%	1/4W
R721	1-260-099-11	CARBON	1K	5%	1/2W
R722	1-260-100-11	CARBON	1.2K	5%	1/2W
R723	1-249-433-11	CARBON	22K	5%	1/4W
R724	1-249-433-11	CARBON	22K	5%	1/4W
R725	1-249-433-11	CARBON	22K	5%	1/4W
R726	1-249-437-11	CARBON	47K	5%	1/4W
R727	1-249-433-11	CARBON	22K	5%	1/4W
R728	1-249-429-11	CARBON	10K	5%	1/4W
R729	1-249-433-11	CARBON	22K	5%	1/4W
R730	1-249-433-11	CARBON	22K	5%	1/4W
R731	1-247-881-00	CARBON	120K	5%	1/4W
R732	1-249-417-11	CARBON	1K	5%	1/4W
R733	1-249-429-11	CARBON	10K	5%	1/4W
R734	1-247-807-31	CARBON	100	5%	1/4W
R735	1-247-885-00	CARBON	180K	5%	1/4W
R736	1-249-429-11	CARBON	10K	5%	1/4W
R737	1-249-437-11	CARBON	47K	5%	1/4W
R738	1-249-417-11	CARBON	1K	5%	1/4W
R739	1-249-441-11	CARBON	100K	5%	1/4W
R740	1-249-417-11	CARBON	1K	5%	1/4W
R741	1-249-429-11	CARBON	10K	5%	1/4W
R742	1-249-417-11	CARBON	1K	5%	1/4W
R744	1-249-441-11	CARBON	100K	5%	1/4W
R745	1-247-807-31	CARBON	100	5%	1/4W
R746	1-249-417-11	CARBON	1K	5%	1/4W
R747	1-260-093-11	CARBON	330	5%	1/2W

< VARIABLE RESISTOR >

RV721	1-225-739-11	RES, VAR CARBON 50K (ECHO LEVEL)			
RV722	1-225-739-11	RES, VAR CARBON 50K (MIC LEVEL)			

< SWITCH >

S601	1-418-725-11	ENCODER, ROTARY (12 TYPE) (VOLUMUE)			
S611	1-771-410-21	SWITCH, TACTILE (△)			
S612	1-771-410-21	SWITCH, TACTILE (▽)			
S613	1-771-410-21	SWITCH, TACTILE (V-GROOVE)			
S614	1-771-410-21	SWITCH, TACTILE (KARAOKE PON)			
S615	1-771-410-21	SWITCH, TACTILE (CD SYNC/HI-DUB)			
S616	1-771-410-21	SWITCH, TACTILE (REC PAUSE/START)			
S617	1-771-410-21	SWITCH, TACTILE (ENTER)			
S618	1-771-410-21	SWITCH, TACTILE (▶▶)			
S619	1-771-410-21	SWITCH, TACTILE (▶▶I +)			
S620	1-771-410-21	SWITCH, TACTILE (▮▮)			
S621	1-771-410-21	SWITCH, TACTILE (– I◀◀)			
S622	1-771-410-21	SWITCH, TACTILE (PICTURE EFFECT)			
S623	1-771-410-21	SWITCH, TACTILE (◁)			
S624	1-771-410-21	SWITCH, TACTILE (▷)			
S625	1-771-410-21	SWITCH, TACTILE (TAPE A/B)			
S626	1-771-410-21	SWITCH, TACTILE (■)			
S627	1-771-410-21	SWITCH, TACTILE (CD)			
S628	1-771-410-21	SWITCH, TACTILE (TUNER/BAND)			
S629	1-771-410-21	SWITCH, TACTILE (◁▷)			
S630	1-771-410-21	SWITCH, TACTILE (MD (VIDEO))			
S631	1-771-410-21	SWITCH, TACTILE (◀◀)			
S632	1-771-410-21	SWITCH, TACTILE (CHINEMA)			
S633	1-771-410-21	SWITCH, TACTILE (DIRECTION)			
S634	1-771-410-21	SWITCH, TACTILE (REPEAT, DOLBY NR)			
S635	1-771-410-21	SWITCH, TACTILE (PLAY MODE, STEREO MODE)			
S636	1-771-410-21	SWITCH, TACTILE (EDIT, TUNER MEMORY)			
S637	1-771-410-21	SWITCH, TACTILE (I/⏻)			
S638	1-771-410-21	SWITCH, TACTILE (GROOVE)			
S639	1-771-410-21	SWITCH, TACTILE (EQ EDIT)			
S640	1-771-410-21	SWITCH, TACTILE (SPECTRUM)			
S641	1-771-410-21	SWITCH, TACTILE (DISPLAY)			

< VIBRATOR >

X601	1-579-352-11	VIBRATOR, CERAMIC (12.5MHz)			

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	A-4428-344-A	POWER AMP BOARD, COMPLETE (IA)			
	A-4428-483-A	POWER AMP BOARD, COMPLETE (E, EA, MY, SP)			

****

< CAPACITOR >

C501	1-126-963-11	ELECT	4.7uF	20%	50V
C502	1-162-294-31	CERAMIC	0.001uF	10%	50V
C503	1-162-286-31	CERAMIC	220PF	10%	50V
C504	1-104-665-11	ELECT	100uF	20%	10V
C507	1-136-495-11	MYLAR	0.068uF	5%	50V

POWER AMP

Ref. No.	Part No.	Description			Remark
C508	1-136-495-11	MYLAR	0.068uF	5%	50V
C509	1-128-560-11	ELECT	22uF	20%	100V
C510	1-128-578-11	ELECT	1uF	20%	100V
C511	1-162-306-11	CERAMIC	0.01uF	30%	16V
C541	1-130-777-00	MYLAR	0.1uF	5%	100V
C542	1-127-752-11	ELECT	3300uF	20%	63V
C544	1-130-777-00	MYLAR	0.1uF	5%	100V
C545	1-130-777-00	MYLAR	0.1uF	5%	100V
C546	1-127-755-11	ELECT	3300uF	20%	100V
C551	1-126-963-11	ELECT	4.7uF	20%	50V
C552	1-162-294-31	CERAMIC	0.001uF	10%	50V
C553	1-162-286-31	CERAMIC	220PF	10%	50V
C554	1-104-665-11	ELECT	100uF	20%	10V
C557	1-136-495-11	MYLAR	0.068uF	5%	50V
C558	1-136-495-11	MYLAR	0.068uF	5%	50V
C559	1-128-560-11	ELECT	22uF	20%	100V
C581	1-126-967-11	ELECT	47uF	20%	50V
C591	1-130-777-00	MYLAR	0.1uF	5%	100V
C592	1-127-752-11	ELECT	3300uF	20%	63V
C596	1-127-755-11	ELECT	3300uF	20%	100V
C942	1-126-964-11	ELECT	10uF	20%	50V
C943	1-126-968-11	ELECT	100uF	20%	50V
C980	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN502	1-778-981-11	CONNECTOR, BOARD TO BOARD 13P			
CN503	1-778-981-11	CONNECTOR, BOARD TO BOARD 13P			
		< DIODE >			
D501	8-719-911-19	DIODE 1SS133T-72			
D502	8-719-911-19	DIODE 1SS133T-72			
D503	8-719-922-03	DIODE MTZJ-T-77-18C			
D504	8-719-922-03	DIODE MTZJ-T-77-18C			
D541	8-719-302-38	DIODE RBV-602-01			
D543	8-719-302-37	DIODE RBV-602			
D551	8-719-911-19	DIODE 1SS133T-72			
D581	8-719-911-19	DIODE 1SS133T-72			
D941	8-719-110-90	DIODE MTZJ-T-77-39D			
D979	8-719-110-31	DIODE MTZJ-T-72-12B			
		< EARTH TERMINAL >			
* EP501	1-537-738-21	TERMINAL, EARTH			
		< IC >			
IC501	8-749-017-06	IC STK412-150			
		< TRANSISTOR >			
Q501	8-729-140-84	TRANSISTOR	2SC1841TP-PAFAEA		
Q503	8-729-140-82	TRANSISTOR	2SA988TP-PAFAEA		
Q504	8-729-140-84	TRANSISTOR	2SC1841TP-PAFAEA		
Q505	8-729-140-84	TRANSISTOR	2SC1841TP-PAFAEA		
Q506	8-729-119-79	TRANSISTOR	2SC2785TP-FEK		
Q551	8-729-140-84	TRANSISTOR	2SC1841TP-PAFAEA		
Q581	8-729-140-84	TRANSISTOR	2SC1841TP-PAFAEA		
Q941	8-729-048-52	TRANSISTOR	2SA1932 (TP)		
Q942	8-729-119-76	TRANSISTOR	2SA1175TP-HFE		

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R501	1-249-417-11	CARBON	1K	5%	1/4W
R502	1-249-438-11	CARBON	56K	5%	1/4W
R503	1-249-412-11	CARBON	390	5%	1/4W
R504	1-249-438-11	CARBON	56K	5%	1/4W
R505	1-249-417-11	CARBON	1K	5%	1/4W
R506	1-249-431-11	CARBON	15K	5%	1/4W
R507	1-249-441-11	CARBON	100K	5%	1/4W
⚠R508	1-219-718-11	METAL	0.1	10%	5W F
R509	1-260-076-11	CARBON	10	5%	1/2W
⚠R510	1-219-718-11	METAL	0.1	10%	5W F
⚠R511	1-212-881-11	FUSIBLE	100	5%	1/4W F
⚠R512	1-202-972-61	FUSIBLE	1	5%	1/4W F
R513	1-249-435-11	CARBON	33K	5%	1/4W
R514	1-249-421-11	CARBON	2.2K	5%	1/4W
R515	1-249-433-11	CARBON	22K	5%	1/4W
R516	1-249-429-11	CARBON	10K	5%	1/4W
R517	1-249-421-11	CARBON	2.2K	5%	1/4W
R518	1-249-435-11	CARBON	33K	5%	1/4W
R519	1-249-439-11	CARBON	68K	5%	1/4W
⚠R520	1-215-872-11	METAL OXIDE	3.3K	5%	1W F
R521	1-249-441-11	CARBON	100K	5%	1/4W
R522	1-249-441-11	CARBON	100K	5%	1/4W
R523	1-249-441-11	CARBON	100K	5%	1/4W
⚠R524	1-215-872-11	METAL OXIDE	3.3K	5%	1W F
R541	1-249-441-11	CARBON	100K	5%	1/4W
R542	1-249-441-11	CARBON	100K	5%	1/4W
R551	1-249-417-11	CARBON	1K	5%	1/4W
R552	1-249-438-11	CARBON	56K	5%	1/4W
R553	1-249-412-11	CARBON	390	5%	1/4W
R554	1-249-438-11	CARBON	56K	5%	1/4W
R555	1-249-417-11	CARBON	1K	5%	1/4W
R556	1-249-431-11	CARBON	15K	5%	1/4W
R557	1-249-441-11	CARBON	100K	5%	1/4W
⚠R558	1-219-718-11	METAL	0.1	10%	5W F
R559	1-260-076-11	CARBON	10	5%	1/2W
⚠R560	1-219-718-11	METAL	0.1	10%	5W F
⚠R561	1-212-881-11	FUSIBLE	100	5%	1/4W F
R581	1-249-435-11	CARBON	33K	5%	1/4W
R582	1-249-435-11	CARBON	33K	5%	1/4W
R591	1-249-441-11	CARBON	100K	5%	1/4W
R592	1-249-441-11	CARBON	100K	5%	1/4W
⚠R941	1-216-478-11	METAL OXIDE	390	5%	3W F
R942	1-249-429-11	CARBON	10K	5%	1/4W
R943	1-249-417-11	CARBON	1K	5%	1/4W
R944	1-247-791-91	CARBON	22	5%	1/4W
R980	1-249-429-11	CARBON	10K	5%	1/4W
		< THERMISTOR >			
TH501	1-807-796-11	THERMISTOR			

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
	1-675-911-11	SENSOR BOARD				
		**********				
		< CAPACITOR >				
C712	1-164-159-11	CERAMIC	0.1uF			50V
		< PHOTO INTERRUPTER >				
IC711	8-749-014-38	PHOTO INTERRUPTER SG-264				
		< RESISTOR >				
R711	1-247-876-11	CARBON	75K	5%	1/4W	
R712	1-249-409-11	CARBON	220	5%	1/4W	
R713	1-249-429-11	CARBON	10K	5%	1/4W	
		< SWITCH >				
S711	1-771-821-11	SWITCH, PUSH (1 KEY) (BU UP/DOWN)				
**********						
	1-676-808-11	TRANS BOARD				
		**********				
	1-533-293-11	FUSE HOLDER				
		< CAPACITOR >				
⚠C972	1-113-925-11	CERAMIC	0.01uF	20%	250V (E, EA, MY, SP)	
		< CONNECTOR >				
CN975	1-564-321-00	PIN, CONNECTOR 2P				
* CN977	1-564-528-11	PLUG, CONNECTOR 13P				
		< FUSE >				
⚠F971	1-532-506-31	FUSE (T6.3AL/250)				
⚠F974	1-532-506-31	FUSE (T6.3AL/250)				
⚠F975	1-532-506-31	FUSE (T6.3AL/250)				
⚠F976	1-533-949-31	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250)				
⚠F977	1-533-949-31	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250)				
		< RESISTOR >				
⚠R952	1-219-120-11	FUSIBLE	0.15	5%	1/4W F	
⚠R953	1-219-120-11	FUSIBLE	0.15	5%	1/4W F	
		< SWITCH >				
⚠S951	1-771-291-11	SWITCH, POWER (VOLTAGE SELECTOR)				
		< TRANSFORMER >				
⚠T971	1-435-325-11	POWER TRANSFORMER				
**********						
	A-4724-973-A	VIDEO BOARD, COMPLETE				
		**********				
		< CAPACITOR >				
C101	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C102	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V	
C103	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C201	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C202	1-163-143-00	CERAMIC CHIP	0.0012uF	5%	50V	
C203	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C304	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	
C305	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C306	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	
C307	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C308	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	
C309	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	
C310	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C311	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C312	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C313	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C314	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C315	1-163-255-11	CERAMIC CHIP	150PF	5%	50V	
C316	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C317	1-126-193-11	ELECT	1uF	20%	50V	
C318	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C319	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C320	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C321	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C322	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C323	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C324	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C325	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C401	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C402	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C504	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C505	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C506	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C507	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C508	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C509	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C510	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C531	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C532	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C535	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C536	1-126-193-11	ELECT	1uF	20%	50V	
C537	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C539	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C540	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C541	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C542	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C543	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C544	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C545	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C546	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C547	1-126-193-11	ELECT	1uF	20%	50V	
C548	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C549	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C550	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C551	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C552	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C553	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C555	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	
C556	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C559	1-126-206-11	ELECT CHIP	100uF	20%	6.3V	
C561	1-163-089-00	CERAMIC CHIP	6PF		50V	
C563	1-165-319-11	CERAMIC CHIP	0.1uF		50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

VIDEO

Ref. No.	Part No.	Description			Remark
C564	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C565	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C566	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C568	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C569	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C570	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C571	1-128-065-11	ELECT CHIP	68uF	20%	10V
C573	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C574	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C576	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C577	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CN501	1-779-343-21	CONNECTOR, FFC/FPC 23P			
CN502	1-779-416-11	CONNECTOR, FFC (LIF (NON-ZIF)) 13P			
		< TRIMMER >			
CT503	1-141-539-11	CAP, ADJ	10PF		
		< DIODE >			
D501	8-719-422-12	DIODE UDZ-TE-17-3.9B			
		< IC >			
IC101	8-759-701-40	IC NJM2100M (TE2)			
IC301	8-759-530-30	IC TC74VHCU04FT (EL)			
IC302	8-759-662-94	IC NJM2255M (TE2)			
IC303	8-759-711-47	IC NJM2209M (TE2)			
IC304	8-759-662-95	IC BA7665FS-E2			
IC501	8-759-530-30	IC TC74VHCU04FT (EL)			
IC502	8-759-663-01	IC M30620MCA-A34FP			
IC504	8-759-530-30	IC TC74VHCU04FT (EL)			
IC505	8-759-535-48	IC CL680T-D1			
IC506	8-759-677-67	IC LC372100PM-K98-TLA			
IC507	8-759-342-01	IC MSM514260C-60JS			
IC509	8-759-535-62	IC PCM1727E-2/T2			
		< JACK >			
J301	1-537-943-11	TERMINAL, S (S VIDEO OUT)			
J302	1-774-227-11	JACK, PIN 1P (VIDEO OUT)			
		< RESISTOR >			
JW101	1-216-295-00	SHORT	0		
JW201	1-216-295-00	SHORT	0		
JW301	1-216-295-00	SHORT	0		
JW302	1-216-025-00	RES-CHIP	100	5%	1/10W
JW304	1-216-295-00	SHORT	0		
JW413	1-216-295-00	SHORT	0		
JW504	1-216-295-00	SHORT	0		
JW505	1-216-295-00	SHORT	0		
JW513	1-216-295-00	SHORT	0		
		< COIL/SHORT >			
L301	1-410-372-21	INDUCTOR CHIP	1.8uH		
L302	1-410-372-21	INDUCTOR CHIP	1.8uH		
L303	1-410-658-31	INDUCTOR CHIP	220uH		
L501	1-216-296-00	SHORT	0		
L502	1-216-296-00	SHORT	0		

Ref. No.	Part No.	Description			Remark
L504	1-410-375-11	INDUCTOR CHIP	3.3uH		
L505	1-216-296-00	SHORT	0		
L506	1-216-296-00	SHORT	0		
L507	1-216-296-00	SHORT	0		
L508	1-216-296-00	SHORT	0		
L509	1-216-296-00	SHORT	0		
L510	1-216-296-00	SHORT	0		
L511	1-469-705-21	INDUCTOR	0uH		
L512	1-469-705-21	INDUCTOR	0uH		
L513	1-469-705-21	INDUCTOR	0uH		
		< TRANSISTOR >			
Q501	8-729-900-53	TRANSISTOR	DTC114EKA-T146		
Q502	8-729-900-53	TRANSISTOR	DTC114EKA-T146		
Q531	8-729-140-75	TRANSISTOR	2SD999-T1-CLCK		
		< RESISTOR >			
R101	1-216-073-00	METAL CHIP	10K	5%	1/10W
R102	1-208-441-61	RES-CHIP	1.5K	2%	1/10W
R103	1-208-441-61	RES-CHIP	1.5K	2%	1/10W
R201	1-216-073-00	METAL CHIP	10K	5%	1/10W
R202	1-208-441-61	RES-CHIP	1.5K	2%	1/10W
R203	1-208-441-61	RES-CHIP	1.5K	2%	1/10W
R302	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R303	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R306	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R310	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R311	1-216-029-00	METAL CHIP	150	5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W
R313	1-216-073-00	METAL CHIP	10K	5%	1/10W
R314	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R315	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R316	1-216-022-00	METAL CHIP	75	5%	1/10W
R317	1-216-022-00	METAL CHIP	75	5%	1/10W
R318	1-216-295-00	SHORT	0		
R319	1-216-624-11	METAL CHIP	75	0.5%	1/10W
R320	1-216-295-00	SHORT	0		
R403	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R404	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R501	1-216-025-00	RES-CHIP	100	5%	1/10W
R502	1-216-025-00	RES-CHIP	100	5%	1/10W
R503	1-216-025-00	RES-CHIP	100	5%	1/10W
R504	1-216-025-00	RES-CHIP	100	5%	1/10W
R505	1-216-025-00	RES-CHIP	100	5%	1/10W
R506	1-216-025-00	RES-CHIP	100	5%	1/10W
R507	1-216-073-00	METAL CHIP	10K	5%	1/10W
R508	1-216-073-00	METAL CHIP	10K	5%	1/10W
R516	1-216-073-00	METAL CHIP	10K	5%	1/10W
R517	1-216-073-00	METAL CHIP	10K	5%	1/10W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-025-00	RES-CHIP	100	5%	1/10W
R520	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R521	1-216-073-00	METAL CHIP	10K	5%	1/10W
R523	1-216-013-00	METAL CHIP	33	5%	1/10W
R530	1-216-025-00	RES-CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R531	1-216-025-00	RES-CHIP	100	5%	1/10W
R532	1-216-295-00	SHORT	0		
R533	1-216-295-00	SHORT	0		
R534	1-216-073-00	METAL CHIP	10K	5%	1/10W
R535	1-216-073-00	METAL CHIP	10K	5%	1/10W
R536	1-216-033-00	METAL CHIP	220	5%	1/10W
R537	1-216-025-00	RES-CHIP	100	5%	1/10W
R538	1-216-073-00	METAL CHIP	10K	5%	1/10W
R539	1-216-295-00	SHORT	0		
R540	1-216-295-00	SHORT	0		
R542	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R543	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R544	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R545	1-216-025-00	RES-CHIP	100	5%	1/10W
R546	1-216-049-11	RES-CHIP	1K	5%	1/10W
R548	1-216-049-11	RES-CHIP	1K	5%	1/10W
R549	1-216-025-00	RES-CHIP	100	5%	1/10W
R550	1-216-025-00	RES-CHIP	100	5%	1/10W
R551	1-216-025-00	RES-CHIP	100	5%	1/10W
R552	1-216-025-00	RES-CHIP	100	5%	1/10W
R555	1-216-121-00	RES-CHIP	1M	5%	1/10W
R556	1-216-025-00	RES-CHIP	100	5%	1/10W
R557	1-216-025-00	RES-CHIP	100	5%	1/10W
R560	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W
R561	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R562	1-216-073-00	METAL CHIP	10K	5%	1/10W
R563	1-216-073-00	METAL CHIP	10K	5%	1/10W
R577	1-216-081-00	METAL CHIP	22K	5%	1/10W
R578	1-216-081-00	METAL CHIP	22K	5%	1/10W
R579	1-216-073-00	METAL CHIP	10K	5%	1/10W
R580	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VIBRATOR >			
X501	1-767-510-11	VIBRATOR, CERAMIC (10Mz)			
X503	1-767-519-11	VIBRATOR, CRYSTAL (27MHz)			
**********					
		MISCELLANEOUS			
		**********			
11	1-792-246-11	WIRE (FLAT TYPE) (23 CORE)			
⚠13	1-526-794-11	OUTLET, AC			
101	1-773-045-11	WIRE (FLAT TYPE) (17 CORE)			
104	1-690-589-31	WIRE (FLAT TYPE) (13 CORE)			
⚠108	1-575-653-11	CORD, POWER (E)			
⚠108	1-777-071-21	CORD, POWER (MY, SP)			
⚠108	1-777-071-51	CORD, POWER (EA, IA)			
⚠109	1-569-007-11	ADAPTOR, CONVERSION 2P (E)			
⚠109	1-569-008-21	ADAPTOR, CONVERSION 2P (EA, MY, SP, IA)			
209	1-791-983-12	WIRE (FLAT TYPE) (8 CORE)			
216	1-471-035-11	MAGNET ASSY			
⚠251	8-820-116-01	OPTICAL PICK-UP KSM-213DAP/Z-NP			
252	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)			
HP901	X-4953-985-1	BLOCK (A) ASSY, HEAD (PB)			
HRPE901	X-4953-986-1	BLOCK (B) ASSY, HEAD (REC/PB/ERASE)			
M721	A-4672-826-A	MOTOR ASSY (TURN)			
M901	X-3378-241-1	MOTOR ASSY (CAPSTAN/REEL)			
M961	1-763-072-11	FAN, D. C.			
⚠T971	1-435-325-11	POWER TRANSFORMER			
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Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-628-254-05	SCREW +PS 2.6X5	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 N-S	
#5	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
#6	7-685-881-09	SCREW +BVTT 4X8 (S)	
#7	7-623-921-01	WASHER 1.7, NYLON	
#8	7-685-783-09	SCREW +PTT 2X6 (S)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2000.04	New
1.1	2001.08	Changing of parts supply classification of tape mechanism deck (SPM-01030)
1.2	2001.11	Addition of Ref. No. 226 for chassis (SPM-01044)
1.3	2002.11	Correction of Part No. for Ref. No. HP901, HRPE901 (SPM-02097)